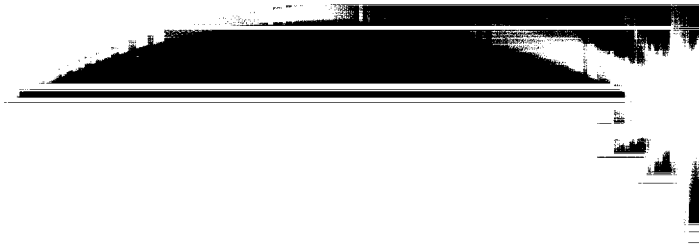


Arts  
P.E. 12/31/04



05052633

# Universal Display Corporation Annual Report 2004



PROCESSED

APR 28 2005

THOMSON  
FINANCIAL

## Dear Shareholder



Taking initiative was an important theme for your company in 2004. We partnered with a record number of manufacturers and won the highest level of government contract awards in our history. Universal Display also took additional steps this year to position your company for the future. To prepare for new opportunities, we broadened our efforts in two key technology areas and began the expansion of our physical plant.

At Universal Display Corporation, we believe that our proprietary OLED technologies, including our PHOLED™ phosphorescent OLED technology, hold tremendous promise. Most important, the industry believes it too. This year, we entered into eight new evaluation and development agreements, expanding our total number of evaluation, development, license and material supply agreements to twenty. Most of these are with major firms that envision manufacturing OLEDs using our PHOLED technology. These companies span the globe from Taiwan, China, Korea and Japan to the United States and Europe. In 2004, we also expanded our research network — with institutions in Japan, Korea and Taiwan — to complement our long-standing collaborative relationships with Princeton University and the University of Southern California.

The strides that we have made with our OLED technology allowed us to continue attracting such strong industry support. During the year, Universal Display expanded its intellectual property portfolio. We now own, have exclusive license rights to, or have sole rights to sublicense, more than 625 issued and pending patents worldwide. In 2004, we also demonstrated new PHOLED colors, longer lifetimes and greater efficiencies. Our continued efforts with PPG Industries led to significant progress in the development and commercial supply of our proprietary PHOLED materials, while our partnership with Aixtron AG brought us a new source of royalty revenues.

Universal Display also took initiative in two exciting technology development areas for the future: flexible OLEDs (FOLEDs™) and white OLEDs (WOLEDs™) for lighting. Significant support from the U.S. Department of Defense (DOD) and U.S. Department

### On The Cover

...ence of light playing over  
...is a living symbol of  
... Universal Display Corporation in  
... It was a year of expanding  
... water and air  
... the future of the world.

of Energy (DOE) is evidence that we are on the right track. In 2004, we won more than \$2.3 million in new DOD contracts and a total of \$5.9 million in new DOE contracts.

Though the active-matrix OLED industry did not grow significantly in 2004 — an event that analysts view as a brief interruption while manufacturers worked through start-up issues — your company maintained a firm financial footing. Our successful \$30 million public offering contributed to a strong balance sheet that positions us well to capture a share of the future growth of the OLED industry, which is projected by a leading analyst to grow from \$0.4 billion in 2004 to over \$5.2 billion in 2008.

In 2004, we purchased our 41,000 square-foot headquarters building which houses our state-of-the-art research and development facilities. We began an expansion program to add clean room space and new laboratories. Upon publication of this report, the first phase of this expansion has been completed, with the clean rooms ready to receive new, full-color OLED deposition equipment for our flexible display initiative. These steps provide the necessary infrastructure to enhance our current business and provide the foundation for new initiatives that will expand Universal Display's future business prospects.

It is an exciting time at Universal Display Corporation. As evidenced by the confidence of the industry partners working with us, your company continued to build technology leadership in 2004. We made these strides because our employees infuse our workplace with a spirit of innovation in close collaboration with our research partners. We were able to initiate programs for the future and to expand our infrastructure to support this vision because of our sound financial position. In all we do, we move forward because our shareholders remain committed to the vision of Universal Display Corporation. Thank you for taking the initiative with us.



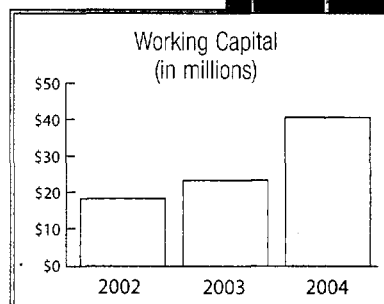
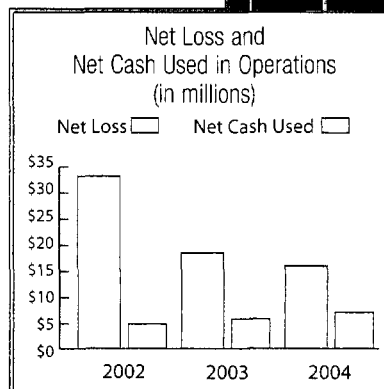
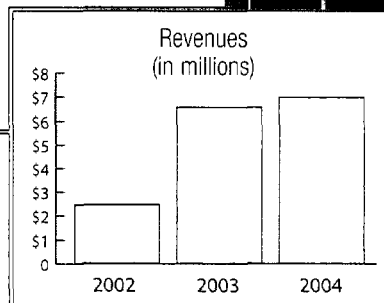
SHERWIN I. SELIGSOHN

*Chairman of the Board and  
Chief Executive Officer*



STEVEN V. ABRAMSON

*President and  
Chief Operating Officer*



## Financial Strength

Universal Display Corporation's revenues grew to \$7,006,913 in 2004 from \$6,593,193 in 2003. We reduced net losses attributable to Common shareholders to \$15,906,198 compared with \$18,387,507 in the prior year. Net cash used in operating activities was \$6,965,083 versus \$5,797,609 in 2003. Working capital increased to \$40,630,913 from \$23,679,705. Our financial footing is sound as the industry focuses on

strengthening its manufacturing infrastructure and we continue to invest for growth in 2005 and beyond.



The Universal Display Management Committee. Standing from left to right are Scott Boyino, Sid Rosenblatt, Steve Abramson and Ronald Campbell. Seated from left to right are Janice Mahon and Julie Brown. Missing from the photo is Mike Hack. In the foreground are displayed our recent awards from the New Jersey Technology Council and the Society for Information Display.



## Today's Initiatives Bring Tomorrow's Advances

OLEDs are an everyday and essential part of our lives and one that offers enormous possibilities for bold new technologies. With OLEDs — organic light emitting diodes that emit bright light — the possibilities are many.

Universal Display has significantly advanced the potential for OLEDs with its proprietary PHOLED™ technology for use in today's display applications as well as in future applications.

PHOLEDs are phosphorescent OLEDs that allow for up to 100% internal quantum efficiency — the conversion of injected electrical charge into photons. Offering as much as four times the brightness of conventional fluorescent OLEDs, this can translate into significant savings in power consumption. In 2004, this capability attracted record levels of interest from industry as well as the U.S. and Japanese Government.

At the start of 2004, our award-winning PHOLEDs had already entered the commercial market in a Pioneer cell phone sub-display that incorporated our technology and one of our proprietary

PHOLED materials. As the year progressed, so did our technology and commercial potential.

We made significant strides in the efficiency, color gamut and lifetimes of our PHOLED technology and materials to meet our partners' manufacturing and product requirements. A few key highlights include:

A red PHOLED with excellent color saturation and luminous efficiency, and more than 100,000 hours of operating lifetime at display luminance (500 cd/m<sup>2</sup>) — a two-fold improvement over the prior year.

A new green PHOLED with 85 cd/A, a significant result representing 100% internal quantum

efficiency, the maximum theoretical limit.

A new class of blue PHOLED emitters with excellent color saturation, demonstrating CIE coordinates of (0.16, 0.10).

With our material supply partner, PPG

Industries, we also grew our PHOLED material supply capabilities for manufacturing evaluation and commercial use.

These advances support our partners' current requirements for cell phone displays and similar electronic products while laying the foundation for the industry's development of next-generation products such as the much-anticipated OLED TV.

PHOLED materials are today commonly

used in vacuum thermal evaporation and are compatible with novel manufacturing techniques. These include Aixtron AG's Organic Vapor Phase Deposition (OVPD™) System that relies upon our patented OVPD technology, and ink-jet printing of OLEDs. In 2004, we also initiated a program with Seiko Epson Corporation (Epson) through which we are developing

our PHOLED technology for Epson's future production using its ink-jet printing process.

**PHOLED MATERIALS**

Our expansive OLED technology also positions Universal Display for the





"The advantages offered by Universal Display's flexible OLED display technology create myriad opportunities for novel designs for portable electronic devices."

ROBERT MCGILL, PRESIDENT,  
L-3 COMMUNICATIONS  
DISPLAY SYSTEMS

advance our  
technology for next-  
generation mobile  
data and voice  
communication

## Designing with Light

The future of OLED technology reaches much further than the cell phone, laptop or television display we already imagine. To capture elements of this vision, we designed the OLED Light House. This concept model of a family room interior portrayed our TOLED® transparent OLEDs as "smart" windows and skylights and our FOLEDs in novel architectural design elements.

We also collaborated with the Harvard University Graduate School of Design in a Soft Design Studio to develop a collection of new design concepts that were exhibited in May as "Portable Light" at Wired's NextFest exhibition.

## Flexible Display Development

During 2004, we made significant advances in our FOLED® flexible OLED technology. In collaboration with

focused efforts in flexible displays and white lighting. From these we envision profitable commercial possibilities.

applications. In this effort, we are working closely with L-3 Communications Display Systems, a leading supplier of ruggedized display systems for military use. And we were pleased to become a founding member of the Army Flexible Display Center, established in 2004 at Arizona State University.

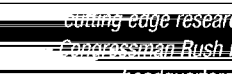
**White Lighting** In May, Universal Display announced the achievement of a record-breaking power efficiency of 18 lumens per Watt in a WOLED™ white OLED using our PHOLED

technology. We reported these advances with our partner, Toyota Industries Corporation, at the 2004 Society for Information Display (SID) International

of Energy awarded Universal Display Corporation \$5.9 million in contracts to advance its solid-state lighting initiative. The programs focus on developing novel manufacturing technology and demonstrating additional power efficiency technologies for energy-efficient, solid-state lighting. Between now and the commercialization of general OLED lighting products, we envision a variety of specialty lighting opportunities to leverage this investment.

Universal Display Corporation

UNIVERSAL D  
CORP A



Universal Display Corporation and its partnership with researchers at Princeton University is the type of collaboration we want to cultivate...as a seedbed for cutting edge research and development."

Congressman Rush Holt, at Universal Display headquarters, July 19, 2004

Symposium in  
Seattle, WA.

During the year,  
the Department



As a leading next-generation technology for electronic displays, OLEDs can provide key advantages over today's liquid crystal displays (LCDs). OLEDs feature vibrant, emissive colors, high contrast ratios and excellent grayscale capability. They also offer fast response time enabling full-motion video, wide viewing angles from all directions, low operating voltage, and a wide operating temperature range. In addition, OLEDs provide a thin and lightweight form factor and can be manufactured cost-effectively.



Universal Display Corporation has spearheaded numerous breakthroughs that benefit the OLED community. These include our PHOLED, FOLED and TOLED® transparent and top-emission OLED technologies. Our research and development, both internal and with our partners at Princeton University and the University of Southern California, and complemented by our acquisition of sole licensing rights to Motorola's OLED technology patents, has yielded

a comprehensive portfolio of intellectual property. This distinctive portfolio includes more than 625 patents and patent applications worldwide as well as a substantial body of knowledge and unique technical expertise.

Our development of breakthrough technology earns recognition from the commercial markets and the Federal Government, as well as from our growing family of shareholders. This recognition is our greatest reward. We also appreciate when others see fit to recognize us for the advances we have made.



☐ We were named the 2004 Public Company of the Year by the New Jersey Technology Council. The



honor recognizes Universal Display as representing the state's best and brightest among technology companies.

☐ For the third consecutive year we were among Deloitte & Touche's prestigious Technology Fast 50 for New Jersey.

□ Universal Display received the SID/*Information Display Magazine* Gold Award for the commercialization of the Company's PHOLED materials at a ceremony held at the 2004 SID Symposium in Seattle, WA.

□ Featuring footage of Universal Display technology, CNN listed OLEDs among its top 25 technologies developed during the last 25 years. Among other technologies receiving this distinction were the personal computer and the Internet.



At Universal Display Corporation we like to say that our technologies are changing the way we see the world. We are gratified that others share our view.

Gathered in front of our corporate logo are some of the people who make your company work for you: the employees of Universal Display Corporation.

<b>FINANCIAL STATEMENTS</b>	Display's beliefs, expectations, hopes or intentions regarding the future. It is important to note that these statements are subject to risks and uncertainties that could cause Universal Display's actual results to differ materially from those	Universal Display and its partners failing to make sufficient advances in their OLED technology and relationships with display manufacturers and others, and Universal Display being unable to	to differ materially from those projected are discussed in the company's periodic reports filed with the SEC, including Universal Display's annual report on Form 10-K for the year ended December 31, 2004 and its quarterly reports on Form 10-Q. Universal Display expressly disclaims
<b>FORWARD-LOOKING STATEMENTS</b>	but are not limited to: the success of alternatives to OLEDs for flat-panel displays; the success of obtaining and maintaining appropriate intellectual property protection for its OLED technologies and commercializing OLED manufacturing on a large scale; and the availability of sufficient financing to fund display development, potential lack of demand for OLED displays or downturns in the market for such products.	obtain and maintain appropriate intellectual property protection for its OLED technologies and commercializing OLED manufacturing on a large scale; and the availability of sufficient financing to fund display development, potential lack of demand for OLED displays or downturns in the market for such products.	any obligation or undertaking to update or revise any forward-looking statements contained in this document to reflect any change in expectations with regard to such statements, or any change in events, conditions or circumstances on which any such statements are based.

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549  
FORM 10-K**

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934** For the fiscal year ended December 31, 2004

**OR**

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934** For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 1-12031

**UNIVERSAL DISPLAY CORPORATION**

(Exact name of registrant as specified in its charter)

Pennsylvania

(State or other jurisdiction of incorporation or organization)

23-2372688

(I.R.S. Employer Identification No.)

375 Phillips Boulevard,  
Ewing, New Jersey

(Address of principal executive offices)

08618

(Zip Code)

**Registrant's telephone number, including area code: (609) 671-0980**

**Securities registered pursuant to Section 12(b) of the Act:**

None

**Securities registered pursuant to Section 12(g) of the Act:**

Common Stock (par value \$0.01 per share)

(Title of Class)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No \_\_\_\_\_

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K ☒

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes ☒ No \_\_\_\_\_

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2004, computed by reference to the closing sale price of the registrant's common stock on the Nasdaq National Market on that date, was approximately \$244,061,829. For purposes of this calculation, all executive officers and directors of the registrant and all beneficial owners of more than 10% of the registrant's common stock (and their affiliates) were considered affiliates.

As of March 8, 2005, the registrant had outstanding 28,077,428 shares of common stock.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's Proxy Statement to be filed with the Securities and Exchange Commission for the Annual Meeting of Shareholders to be held on June 30, 2005 are incorporated by reference into Part III of this report.

## TABLE OF CONTENTS

### PART I

ITEM 1.	BUSINESS .....	4
ITEM 2.	PROPERTIES .....	15
ITEM 3.	LEGAL PROCEEDINGS.....	15
ITEM 4.	SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS .....	15

### PART II

ITEM 5.	MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.....	17
ITEM 6.	SELECTED FINANCIAL DATA.....	18
ITEM 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.....	18
ITEM 7A.	QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK ...	33
ITEM 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA .....	33
ITEM 9.	CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.....	33
ITEM 9A.	CONTROLS AND PROCEDURES .....	33
ITEM 9B.	OTHER INFORMATION .....	33

### PART III

ITEM 10.	DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT .....	34
ITEM 11.	EXECUTIVE COMPENSATION.....	34
ITEM 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT.....	34
ITEM 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS .....	34
ITEM 14.	PRINCIPAL ACCOUNTING FEES AND SERVICES .....	34

### PART IV

ITEM 15.	EXHIBITS, FINANCIAL STATEMENT SCHEDULES .....	35
----------	---	----



## **CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS**

This report and the documents incorporated by reference in this report contain some "forward-looking statements." Forward-looking statements concern our possible or assumed future results of operations, including descriptions of our business strategies. These statements often include words such as "believe," "expect," "anticipate," "intend," "plan," "estimate," "seek," "will," "may" or similar expressions. These statements are based on assumptions that we have made in light of our experience in the industry, as well as our perceptions of historical trends, current conditions, expected future developments and other factors we believe are appropriate in these circumstances.

As you read and consider this report, you should not place undue reliance on any forward-looking statements. You should understand that these statements involve substantial risk and uncertainty and are not guarantees of future performance or results. They depend on many factors that are discussed further in the section of this report entitled "Factors that May Affect Future Results and Financial Condition," including:

- the outcomes of our ongoing and future research and development activities, and those of others, relating to organic light emitting diode (OLED) technologies and materials;
- our ability to access future OLED technology developments of our academic and commercial research partners;
- the potential commercial applications of and future demand for our OLED technologies and materials, and of OLED products in general;
- our ability to form and continue strategic relationships with manufacturers of OLED products;
- successful commercialization of products incorporating our OLED technologies and materials by OLED manufacturers, and their continued willingness to utilize our OLED technologies and materials;
- the comparative advantages and disadvantages of our OLED technologies and materials versus competing technologies and materials currently on the market;
- the nature and potential advantages of any competing technologies that may be developed in the future;
- our ability to compete against third parties with resources greater than ours;
- our ability to maintain and improve our competitive position following the expiration of our fundamental OLED patents;
- the adequacy of protections afforded to us by the patents that we own or license and the cost to us of enforcing those protections;
- our ability to obtain, expand and maintain patent protection in the future, and to protect our unpatentable intellectual property;
- the payments that we expect to receive in the future under our existing contracts and the terms that we are able to enter into with new OLED display manufacturers;
- our future capital requirements and our ability to obtain additional financing if and when needed; and
- our future OLED technology licensing and OLED material sales revenues and results of operations.

Changes or developments in any of these areas could affect our financial results or results of operations, and could cause actual results to differ materially from those contemplated in the forward-looking statements.

All forward looking statements speak only as of the date of this report or the documents incorporated by reference, as the case may be. Except for special circumstances in which a duty to update arises when prior disclosure becomes materially misleading in light of subsequent events, we do not intend to update any of these forward-looking statements to reflect events or circumstances after the date of this report or to reflect the occurrence of unanticipated events.

## PART I

### ITEM 1. BUSINESS

#### ***Our Company***

We are a leader in the research, development and commercialization of organic light emitting diode, or OLED, technologies for use in a variety of flat panel display and other applications. OLEDs are thin, lightweight and power-efficient solid-state devices, highly suitable for use in portable, full-color display applications. We believe OLED displays will capture a share of the growing flat panel display market because they offer advantages over competing technologies with respect to brightness, power efficiency, viewing angle, video response time and manufacturing cost. We believe that our technology leadership and intellectual property position will enable us to share in the revenues from OLED displays as they enter the mainstream consumer electronics market.

Our strategy is to further develop and license our proprietary OLED technologies to display manufacturers for use in applications such as mobile phones, digital cameras, laptop computers, televisions and other consumer electronic devices. In support of this primary objective, we also develop new OLED materials and sell those materials to these OLED manufacturers. Through our internal research and development efforts and our relationships with world-class partners such as Princeton University, the University of Southern California and PPG Industries, Inc., we have established a significant portfolio of OLED technologies and associated intellectual property rights. We currently own, exclusively license or have the sole right to sublicense more than 625 patents issued and pending worldwide. We are currently selling one of our proprietary OLED materials to Tohoku Pioneer Corporation, have established a cross-license agreement with DuPont Displays, Inc. and have entered into technology development and/or evaluation agreements with several other companies, including AU Optronics Corporation, Samsung SDI Co., Ltd., Sony Corporation, Seiko Epson Corporation and Toyota Industries Corporation.

#### **Industry Overview**

##### ***The Flat Panel Display Market***

Flat panel displays have been used for many years in a wide variety of portable consumer electronics products, including mobile phones, personal digital assistants, or PDAs, cameras, camcorders, electronic games and laptop computers. Due to their narrow profile, light weight and high resolution, flat panel displays are displacing cathode ray tube, or CRT, displays in larger product applications such as desktop computer monitors and televisions.

##### ***The OLED Display Market***

An OLED is a solid-state device made by placing a series of organic thin films between two electrodes. When electrical current is applied to an OLED, a bright light is emitted. OLEDs use red, green and blue pixels, or white light with color filters, to generate full-color displays that exhibit a broad spectrum of colors. Currently, there are two mechanisms through which OLEDs emit light, phosphorescence and fluorescence. Fluorescent OLEDs emit light from a singlet state of the emissive material and phosphorescent OLEDs emit light from a triplet state of the emissive material. By emitting light from a triplet state, phosphorescence offers up to four times the power efficiencies of fluorescence.

The initial market for OLED technologies and materials is flat panel displays, a market currently dominated by liquid crystal displays, or LCDs. However, OLED displays are an attractive alternative to LCDs as they offer a number of potential advantages, including:

- a thinner profile and lighter weight;
- higher brightness and contrast ratios, leading to sharper picture images and graphics;
- wider viewing angles;
- faster response times for video;

- higher efficiencies, thereby reducing power consumption; and
- lower cost manufacturing methods and materials.

We believe OLED displays will be adopted for use in small- to medium-sized product applications, such as mobile phone main and sub-displays, car audio systems, digital cameras, PDAs, DVD players, handheld TVs, notebook PCs and industrial applications. Additionally, the sharper picture images and graphics, superior video response time, wider viewing angle and potentially lower manufacturing cost of OLED displays may give them an advantage over LCDs in larger applications such as laptop computers, desktop computer monitors and televisions, in which these characteristics are important.

While the display characteristics of OLEDs and LCDs are different, they share many similarities in terms of manufacturing technology and infrastructure, such as those relating to active matrix backplane technologies. These similarities may enable the conversion of existing LCD manufacturing facilities to OLED display production with relatively low capital investment.

Many companies currently are engaged in efforts to develop and commercialize OLED displays. We believe that if their efforts are successful, they could result in flat panel displays nearly as thin as a piece of paper with performance characteristics similar to those of CRT displays. In addition, due to the inherent transparency of organic materials and through the use of transparent electrode technology, OLEDs eventually may enable the production of transparent displays for use in products such as automotive windshields and windows with embedded displays. Organic materials also make technically possible the development of flexible displays for use in an entirely new set of product applications, such as display devices that can be rolled up for storage. Research also is being conducted on OLEDs for applications such as energy-efficient solid-state lighting.

### **Our Competitive Strengths**

We believe our position as one of the leading technology developers in the OLED industry is the direct result of our technological innovation. We have built an extensive intellectual property portfolio around our OLED technologies and materials, and are working diligently to enable our manufacturing partners to adopt our OLED technologies and materials for commercial usage. Our key competitive strengths include:

*Technology Leadership.* We are a recognized technology leader in the OLED industry. We and our research partners at Princeton University and the University of Southern California pioneered the development of our phosphorescent OLED, or PHOLED™, technology, which can be used to produce OLED displays that are up to four times as efficient as fluorescent OLED displays and more than twice as efficient as current LCDs. We believe that our PHOLED technology is well-suited for industry usage in the commercial production of OLED displays. Through our relationships with companies such as PPG Industries and our academic partners, we have developed and continue to develop novel OLED materials that we believe will facilitate the adoption of our OLED technologies by display manufacturers.

*Relationships with Leading Display Manufacturers.* We have established relationships with well-known display manufacturers that are using, or are evaluating, our OLED technologies and materials for commercial applications. In August 2003, we began supplying Tohoku Pioneer with our proprietary red phosphorescent material for its commercial production of full-color OLED displays for a mobile phone being sold in Japan. In addition, we have entered into a cross-license agreement with DuPont Displays and have established evaluation, technology development, licensing and/or material supply agreements with a number of display manufacturers, including AU Optronics, Samsung SDI, Sony, Epson and Toyota Industries. As of December 31, 2004, we had entered into twenty such agreements, eight of which were newly established in 2004.

*Broad Portfolio of Intellectual Property.* We believe that our extensive portfolio of patents, trade secrets and know-how provides us with a competitive advantage in the OLED industry. Through our internal development efforts and our relationships with Princeton University, the University of Southern California and Motorola, Inc., we own, exclusively license or have the sole right to sublicense more than 625 patents issued and pending worldwide related to our PHOLED and other OLED technologies and materials. We also continue to accumulate valuable trade secret information and technical know-how relating to our OLED technologies and materials.

*Business Model Focused on Technology Licensing.* Our current business model does not involve the manufacture or sale of OLED displays incorporating our technologies and materials. Rather, we are focused on licensing our OLED technologies to display manufacturers on a non-exclusive basis. PPG Industries currently manufactures our proprietary OLED materials, which we then qualify and sell to display manufacturers. We believe this business model allows us to concentrate on our core strengths of technology development and innovation, while at the same time providing significant operating leverage. We also believe that this approach may reduce potential competitive conflicts between us and our customers.

*Established U.S. Government Contracts to Fund Research and Development.* We have entered into several research and development contracts with U.S. government agencies such as the U.S. Department of the Army, the Army Research Laboratories, and the Department of Energy. Under these contracts, the U.S. government funds a portion of our efforts to develop next-generation OLED technologies for applications such as flexible displays and energy-efficient solid-state lighting. This enables us to supplement our internal research and development budget with additional funding.

*Experienced Management and Scientific Advisory Team.* Our management team has significant experience in developing business models focused on licensing disruptive technologies in high growth industries, which serves to differentiate us from our competitors. In addition, our management team has assembled a Scientific Advisory Board that includes some of the leading researchers in the OLED industry. We believe our Scientific Advisory Board, which includes Professor Stephen R. Forrest of Princeton University and Professor Mark E. Thompson of the University of Southern California, PPG Industries' researchers Dr. Peter B. Mackenzie, Scientist and Dr. David B. Knowles, Senior Research Associate, as well as Dr. Julia J. Brown, the Chair of our Scientific Advisory Board and our Chief Technical Officer and Dr. Michael Hack, our Vice President of Strategic Product Development, has enhanced our reputation and our competitive profile.

## **Our Business Strategy**

Our business strategy is to promote our OLED technologies and materials for widespread use in OLED displays and other product applications. We presently are focused on the following steps to implement our business strategy:

*Target Leading Display Manufacturers.* We are targeting leading display manufacturers as potential commercial licensees of our OLED technologies and purchasers of our OLED materials. For example, we have entered into a relationship with Tohoku Pioneer to purchase our proprietary red phosphorescent material for its commercial production of full-color OLED displays and are pursuing other such relationships. We provide technical assistance and support to display manufacturers evaluating our OLED technologies and materials because we believe that successful incorporation of our technologies and materials in commercial applications may place competitive pressure on other industry participants to adopt them.

*Enhance Our Portfolio of Existing PHOLED Technologies and Materials.* We believe that a strong portfolio of OLED technologies and materials is critical to our success in the display industry. Consequently, we are continually seeking to expand this portfolio through our internal development efforts, our collaborative relationships with academic and other research partners, and other strategic opportunities. Our primary focus is to develop new and improved PHOLED materials, with increased efficiencies, enhanced color gamut and extended lifetimes, and which are compatible with different manufacturing methods, so that they can be used in a broader array of OLED display products, such as televisions. Currently, one of our red materials is in production with an OLED display manufacturer, several of our red and green materials are being evaluated by a number of OLED display manufacturers for use in production, and our blue and white materials are still under development.

*Expand Development of Next-Generation Technologies.* We continue to conduct research and development activities relating to next-generation OLED technologies. Our current research and development initiatives involve flexible OLED displays, transparent or top-emitting OLED displays and OLEDs for energy-efficient solid-state lighting. We also are conducting research with our partners on the use of organic thin-film technology in applications such as lasers, transistors, photo detectors, electronic memories and other related devices. Our focus on next-generation technologies is designed to enable us to continue our position as a leading provider of OLED technologies and materials as new markets emerge.

## Our Phosphorescent OLED Technologies

Phosphorescent OLEDs, or PHOLEDs, our key proprietary technology, utilize novel materials and device structures that allow OLEDs to emit light through a process known as phosphorescence. Conversely, fluorescent OLEDs emit light through an inherently less efficient process. Testing has demonstrated that PHOLEDs exhibit device efficiencies up to four times higher than those exhibited by fluorescent OLEDs. This substantially reduces the power requirements of an OLED and is potentially useful for hand-held devices, such as mobile phones, where battery power is often a limiting factor. Phosphorescence also may be important for large-area displays such as televisions, where higher efficiency may enable longer product lifetimes. Through our commercial relationships with PPG Industries and several display manufacturers, as well as through research we are sponsoring with our academic partners, we are conducting research and development work directed towards both improving our existing PHOLED technologies and materials and developing new PHOLED technologies and materials. A significant portion of this work involves the evaluation and qualification of PHOLED materials for possible use in the commercial production of OLED displays.

OLEDs can be manufactured using different processing methods. Currently, the most common method is through vacuum thermal evaporation, or VTE. Another method involves preparing solutions of the various organic materials in an OLED that can be solution processed by techniques such as spin coating or inkjet printing onto the substrate. Solution processing methods, and inkjet printing in particular, have the potential to be lower cost approaches to OLED manufacturing and scalable to large area displays. Others have demonstrated that solution processing methods can be used to produce OLEDs containing polymer-based fluorescent organic materials, and we are developing printable PHOLEDs, or P<sup>2</sup>OLEDs™, to demonstrate that these methods can be used with our PHOLED technologies. We have Joint Development Agreements with both DuPont Displays and Epson relating to P<sup>2</sup>OLEDs.

## Our Additional Proprietary OLED Technologies

We currently are focusing our research, development and commercialization efforts on a number of OLED device and manufacturing technologies, including the following:

*Transparent OLEDs (TOLEDs™).* We have developed a technology for the production of OLEDs that have transparent cathodes. Conventional OLEDs use a reflective metal cathode and a transparent anode. In contrast, TOLEDs use a transparent cathode and either a transparent, or reflective or opaque metal anode. TOLEDs utilizing transparent cathodes and reflective metal anodes are known as "top-emission" OLEDs. In a "top-emission" active matrix OLED, light is emitted without having to travel through much of the device electronics where a substantial portion of it is absorbed. This is expected to result in OLED displays having image qualities and lifetimes superior to those of conventional active matrix OLEDs. TOLEDs utilizing cathodes and anodes that are both transparent may in the future be useful in novel flat panel display applications requiring semi-transparency or transparency, such as graphical displays in automotive windshields.

*Flexible OLEDs (FOLEDs™).* We are working on a number of technologies required for the fabrication of small molecule OLEDs on flexible substrates. Most OLED and other flat panel displays are built on rigid substrates such as glass. FOLEDs are OLEDs built on non-rigid substrates such as plastic or metal foil. FOLEDs are expected to be conformable to specific shapes, able to withstand repeated bending or flexing, and eventually capable of being rolled into a cylinder, similar to a window shade. These features create the possibility of new flat panel display product applications that do not exist today, such as a portable, roll-up Internet connectivity and communications device. Manufacturers eventually may be able to produce FOLEDs using more efficient continuous, or roll-to-roll, processing methods. We currently are conducting research and development on FOLED technologies internally, under several of our U.S. government programs and in connection with the government-sponsored Flexible Display Center at Arizona State University.

*Organic Vapor Phase Deposition (OVPD™).* The standard approach for manufacturing a small molecule OLED, including a PHOLED, is based on a process known as vacuum thermal evaporation, or VTE. In VTE, the thin layers of organic material in an OLED are deposited in a high-vacuum environment. An alternate approach for manufacturing a small molecule OLED is based on OVPD. In contrast to the VTE process, the OVPD process utilizes a carrier gas stream in a hot walled reactor in a low pressure environment to deposit the layers of organic material in an OLED. The OVPD process may offer advantages over the VTE process through more efficient

materials utilization and by being more readily scalable to the production of large-area OLED displays. Furthermore, the OVPD process may offer advantages in OLED performance by enhanced deposition control. We are working with Aixtron AG, a leading manufacturer of metal-organic chemical vapor deposition equipment, to develop and qualify a tool for our fabrication of OLED displays utilizing an OVPD process, and we have granted Aixtron an exclusive license to sell OVPD equipment.

### **Our Strategic Relationships with Display Manufacturers**

We have established evaluation, technology development, licensing and material supply relationships with numerous display manufacturers. As of December 31, 2004, we had entered into twenty such relationships, eight of which were newly established in 2004. These relationships generally are directed towards tailoring our proprietary OLED technologies and materials for use by each individual manufacturer. Our ultimate objective is to license our OLED technologies and sell our OLED materials to these manufacturers for their commercial production of OLED displays. Our key relationships with display manufacturers include:

*Tohoku Pioneer.* In August 2003, we entered into an arrangement to provide our proprietary red PHOLED material to Tohoku Pioneer Corporation, a subsidiary of Pioneer Corporation, for the commercial production of its passive matrix OLED displays on glass substrates. Under this arrangement, we receive payments from Tohoku Pioneer for the PHOLED material and license fees for allowing Tohoku Pioneer to use this material in the production of passive matrix OLED displays. Tohoku Pioneer sells these displays to one of its customers who uses them as the exterior sub-display for a mobile phone being sold in Japan.

*DuPont Displays.* In December 2002, we entered into a Joint Development Agreement with DuPont Displays, Inc. and its parent E.I. DuPont de Nemours and Company (DuPont) for the development of novel phosphorescent materials and device structures for solution processed OLEDs (our P<sup>2</sup>OLEDs). Under the Joint Development Agreement, we have the exclusive right to sublicense any intellectual property developed under the program for use with solution processed OLED displays on rigid glass substrates.

We also entered into a Cross-License Agreement and a Developed Device Additional Payment Agreement with DuPont in December 2002. Under these agreements, we granted DuPont a non-exclusive license under our background phosphorescent emission, transparent cathode and inkjet printing patents, and under any intellectual property developed by us under our joint development program with DuPont, to make and sell solution processed OLED displays on rigid glass substrates. DuPont paid us an up-front license fee and agreed to pay us running royalties on its sales of these displays. As of December 31, 2004, DuPont had not commenced commercial sales of P<sup>2</sup>OLED displays and had not paid us royalties under either of these agreements.

*Sony.* In February 2001, we entered into an agreement with Sony Corporation under which we worked with Sony in its development of active matrix OLED displays utilizing our high-efficiency PHOLED technology and materials. We subsequently entered into a Joint Development and Evaluation Agreement with Sony, effective as of February 2003, which agreement was directed towards tailoring our proprietary PHOLED materials for use in Sony's OLED device structures. We continue to have an agreement with Sony under which we sell Sony our proprietary PHOLED materials for their evaluation in OLED devices.

*Samsung SDI.* In July 2001, we entered into a Joint Development Agreement with Samsung SDI Co., Ltd. The original focus of our agreement with Samsung SDI was the joint development of a portable, low-power OLED display prototype for use in mobile phones and other devices. We have since renewed this agreement with Samsung SDI on several occasions and we continue to sell our proprietary PHOLED materials to Samsung SDI for its evaluation and for purposes of development, manufacturing qualification and product testing.

*Toyota Industries.* In October 2002, we entered into an OLED Technology Development and Evaluation Agreement with Toyota Industries Corporation. Under this agreement, we conduct development activities with Toyota Industries relating to the use of our proprietary PHOLED technology and materials to produce sources of white light, and we sell our proprietary PHOLED materials to Toyota Industries for its evaluation and for development purposes. At the 2004 Society for Information Display International Symposium, we reported a joint paper with Toyota Industries that highlighted a high-efficiency white OLED device made using our PHOLED technology.

*AU Optronics.* In May 2003, we announced that AU Optronics Corporation had fabricated a low-power consumption, full-color active matrix OLED display combining its proprietary amorphous-silicon backplane technology with our proprietary PHOLED technology. The display was showcased at the 2003 Society for Information Display International Symposium and was the subject of a scientific paper presented jointly by us and AU Optronics at the conference. This work stemmed from a joint development agreement we have had in place with AU Optronics since October 2001. We continue to sell our proprietary PHOLED materials to AU Optronics for its evaluation.

*Epson.* In December 2004, we entered into a Joint Development Agreement with Seiko Epson Corporation. Under this agreement, we are conducting development activities with Epson relating to the application of our proprietary PHOLED technology and materials to ink jet printing processes used by Epson. We also sell our proprietary PHOLED materials to Epson for its evaluation and for use under our development program.

### **Our OLED Materials Supply Business**

In support of our primary objective of licensing our OLED technologies, we supply our OLED materials to display manufacturers and others. We device qualify our materials before shipment in order to ensure the materials meet the specifications we agree upon with our customers.

In October 2000, we entered into a Supply Agreement and a Development and License Agreement with PPG Industries. Under the Supply Agreement, we appointed PPG Industries as the exclusive supplier of our proprietary OLED materials that are intended for use in the commercial production of OLEDs. PPG Industries sells these OLED materials to us and we, in turn, device qualify these materials before reselling them to display manufacturers. Under the Development and License Agreement, PPG Industries, among other things, supplies us with OLED materials that we provide to display manufacturers and others for evaluation purposes.

The current term of the Development and License Agreement extends through the end of 2005 and the current term of the Supply Agreement extends through the end of 2007. In December 2004, we amended the Development and License Agreement for 2005 with regard to, among other things, the compensation to PPG Industries for the work it performs and the OLED materials it provides to us under that agreement. We also amended the Supply Agreement to address analytical, health and safety and other ancillary activities conducted by PPG Industries for us under that agreement. We are currently negotiating with PPG Industries the revised terms under which we would extend our existing relationship.

In August 2003, we commenced commercial sales of one of our proprietary red PHOLED materials to Tohoku Pioneer. Tohoku Pioneer is currently using this material in the commercial production of its passive matrix OLED displays on glass substrates. Tohoku Pioneer sells these displays to one of its customers that uses them as the exterior sub-display for a mobile phone being sold in Japan.

### **Research and Development**

Our research and development activities are focused on the advancement of our OLED technologies and materials for displays, lighting and other applications. We conduct this research and development both internally and through various relationships with our commercial business partners and academic institutions. In the years 2004, 2003 and 2002, we spent approximately \$16,651,335, \$17,897,522 and \$15,804,267, respectively, on research and development with respect to our various OLED technologies and materials.

#### ***Internal Development Efforts***

We conduct a substantial portion of our OLED development activities at our state-of-the-art development and testing facility in Ewing, New Jersey. At this facility, we perform technology development, including device and process optimization, prototype fabrication, manufacturing scale-up studies, process and product testing, and characterization and reliability studies. The facility houses three OLED deposition systems that allow us to produce several hundred OLED plates per month, as well as an OVPD system that we are using to study that technology. We are also awaiting delivery of a fourth deposition system that is designed to process full-color, flexible OLED substrates. The facility also contains equipment for substrate patterning, organic material deposition, display packaging, module assembly, and extensive testing in Class 100 and 100,000 clean rooms and

opto- electronic test laboratories. In addition, we utilize the facility as a technology transfer site for work with our business partners. We are in the process of expanding our operations and laboratory space in the building, which we recently purchased, in order to better support our research and development efforts.

We also conduct OLED materials and chemistry research activities in approximately 1,600 square feet of laboratory space that we lease in Princeton, New Jersey. This research involves the fabrication of small quantities of new OLED materials that we then test in OLED devices at our main facility.

As of December 31, 2004, we employed a team of 29 research scientists, engineers and laboratory assistants at our facilities in Ewing and Princeton, New Jersey. This team includes chemists, physicists, engineers with electrical, chemical and mechanical backgrounds, and highly-trained experimentalists.

### ***University Sponsored Research***

We have long-standing relationships with Princeton University and the University of Southern California for the conduct of research relating to our OLED and other organic thin-film technologies and materials for applications such as displays and lighting. This research is performed at Princeton University under the direction of Dr. Stephen R. Forrest and at the University of Southern California under the direction of Dr. Mark E. Thompson.

We fund the research conducted at Princeton University and the University of Southern California under a Research Agreement we executed with the Trustees of Princeton University in October 1997. The University of Southern California conducts its portion of this research under a subcontract between it and Princeton University. In April 2002, we extended the term of our Research Agreement with Princeton University through July 2007. Under the Research Agreement, we incurred costs to Princeton University of \$679,910 in 2004, \$933,156 in 2003 and \$859,339 in 2002. Our maximum funding commitment under the Research Agreement for the period from August 2002 through July 2007 is \$1,495,599 per year. We have exclusive license rights to all patents arising out of the research conducted by Princeton University and the University of Southern California under the Research Agreement.

In April 2004, we entered into a Contract Research Agreement with the Chitose Institute of Science and Technology of Japan (CIST), under which we fund a research program at CIST relating to high-efficiency OLED materials and devices. We receive exclusive rights to all intellectual property developed under this program. This relationship runs through December 2005.

In December 2004, we entered into a Sponsored Research Agreement with the Yuen Tjing Ling Industrial Research Institute of National Taiwan University (TLIRI). Under that agreement we fund a research program at TLIRI relating to new OLED materials, and we receive exclusive rights to all intellectual property developed under that program. The term of that arrangement extends through December 2005.

### ***PPG Industries***

Under our Development and License Agreement with PPG Industries, a team of approximately eight PPG Industries' scientists and engineers is assisting us in developing various OLED materials in which we have a proprietary interest. PPG Industries receives cash and shares of our common stock as compensation for this work, though under limited circumstances PPG Industries has the right to demand payment of cash in full. This agreement also covers the supply to us of OLED materials for purposes of development and manufacturing qualification at our facilities and the facilities of our customers.

### ***Aixtron***

In July 2000, we entered into a Development and License Agreement with Aixtron AG of Aachen, Germany to jointly develop and commercialize equipment for the manufacture of OLEDs using the OVPD process. A pre-production OVPD manufacturing tool was delivered to our Ewing, New Jersey facility in January 2002. We are working with Aixtron to upgrade and qualify this tool to further develop our OVPD technology and for the future development of OLEDs and other organic electronic devices utilizing this technology.



Under the Development and License Agreement, we granted Aixtron an exclusive license to produce and sell equipment used to manufacture OLEDs and other devices using our proprietary OVPD process. Aixtron is required to pay us royalties on its sales of this equipment. Purchasers of the equipment also must obtain rights to use our proprietary OVPD process to manufacture OLEDs and other devices using the equipment, which they may do through us or Aixtron. If these rights are granted through Aixtron, Aixtron is required to make additional payments to us under our agreement.

Aixtron has reported to us the delivery of five OVPD systems since July 2002, including a second generation system that was sold to RiTdisplay Corporation of Taiwan in April 2003. We recorded our first royalty income from Aixtron's sale of these systems in the fourth quarter of 2004.

### ***U.S. Government-Funded Research***

We have entered into several U.S. government contracts and subcontracts to fund a portion of our efforts to develop next-generation OLED technologies and materials for applications such as flexible displays and energy-efficient solid-state lighting. These include, among others, Small Business Innovation Research (SBIR) Phase I program contracts for the demonstration of technical merit and feasibility and SBIR Phase II program contracts for continued research and development and the fabrication of prototypes. On contracts for which we are the prime contractor, we subcontract portions of the work to various entities and institutions, including Princeton University, the University of Southern California, Pennsylvania State University, Kyung Hee University in South Korea, L-3 Communications Corporation, the Palo Alto Research Center (PARC), a subsidiary of Xerox Corporation, and Vitex Systems, Inc. All of our government contracts and subcontracts are subject to termination at the election of the contracting governmental agency. Our government contracts include, among others, the following:

- *OLED Displays on Flexible Metal Foil Substrates.* In the first quarter of 2004, the U.S. Army Research Laboratory (ARL), the U.S. Army Communications — Electronics Command (CECOM) and the Air Force Research Laboratory partnered to award us \$2,505,000 in funding under two government contracts and one subcontract through L-3 Communications for the development and delivery of prototype OLED displays on flexible metal foil substrates. This two-year program is scheduled for completion at the end of 2005.
- *Conformable, Transparent OLED Displays for Head-Mounted Devices.* In January 2003, the U.S. Army (CECOM) awarded us a two-year, \$729,996 SBIR Phase II program contract for the development and delivery of a prototype conformable and transparent OLED display for use in helmets and other head-mounted devices. This program was recently extended for three months and is scheduled for completion in April 2005.
- *OLEDs for White Lighting.* In the third quarter of 2004, the U.S. Department of Energy (DOE) awarded us three new program contracts, for a total of \$1,600,000 in funding, to develop various technical approaches for using our proprietary PHOLED and other technologies for white lighting applications. These awards followed DOE's award to us in September 2003 of a \$750,000 program contract for related work on PHOLEDs for high-performance white lighting. Two of these DOE programs are scheduled to end in the second quarter of 2005 and the other two are scheduled to end in July 2006.
- *Novel Printing of Striped OLEDs.* In October 2004, the U.S. Department of Energy awarded us \$2,400,000 in funding for the fabrication of white OLEDs using a novel deposition process, called organic vapor jet printing (OVJP). Under this program, we are expected to deliver to DOE various prototypes of white OLED devices wherein the PHOLED materials are deposited in red, green and blue stripes using the OVJP process. The three-year program is scheduled for completion in September 2007.

### ***The Army Flexible Display Center***

In December 2004, we entered into an agreement to participate as a charter member of The Army Flexible Display Center (FDC) being established at Arizona State University. The FDC is being supported through a \$51.5 million Cooperative Agreement between Arizona State University and the U.S. Army Research Laboratory. The goal of the FDC is to develop flexible, low power, light-weight, information displays for the

future war fighter and other military and commercial applications. We anticipate expanding our flexible OLED display technology development efforts through our involvement with the FDC.

### ***The United States Display Consortium***

We are a member of the United States Display Consortium (USDC), a cooperative industry and governmental effort aimed at developing an infrastructure to support North American flat panel display manufacturing. The USDC's role is to provide a common platform for flat panel display manufacturers, developers, users and the manufacturing equipment and supplier base. It has more than 90 members, as well as support from ARL. We are one of 12 members on the Governing Board of the USDC and we actively participate on its Technical Council.

### **Intellectual Property**

Along with our personnel, our primary assets are intellectual property. This includes numerous U.S. and foreign patents and patent applications that we own, exclusively license or have the sole right to sublicense. It also includes a substantial body of trade secrets and technical know-how that we have accumulated over time.

#### ***Our Patents***

Our research and development activities, conducted both internally and through collaborative programs with our partners, have resulted in the filing of a substantial number of patent applications relating to our OLED technologies and materials. As of December 31, 2004, we owned 48 issued and pending patents in the U.S., together with numerous counterparts filed in various foreign countries. These patents will start expiring in 2020.

#### ***Patents We License from Princeton University and the University of Southern California***

We exclusively license the bulk of our patent rights under an Amended License Agreement we executed with the Trustees of Princeton University and the University of Southern California in October 1997. As of December 31, 2004, these licensed patent rights included 169 issued and pending patents in the U.S., together with numerous counterparts filed in various foreign countries. These patents will start expiring in 2014.

Under the Amended License Agreement, Princeton University and the University of Southern California granted us a worldwide, exclusive license to specified patents and patent applications relating to OLED technologies and materials. This license grant also extends to any patent rights arising out of the research conducted by Princeton University or the University of Southern California under our Research Agreement with Princeton University. We are free to sublicense to third parties all or any portion of our patent rights under the Amended License Agreement. The term of the Amended License Agreement is perpetual, though it is subject to termination for an uncured material breach or default by us, or if we become bankrupt or insolvent.

Princeton University is responsible for the filing, prosecution and maintenance of all patent rights licensed to us under the Amended License Agreement pursuant to an Interinstitutional Agreement between Princeton University and the University of Southern California. However, we participate closely in this process and have the right to instruct patent counsel on additional matters to be covered in any patent applications filed by Princeton University. We are required to bear all costs associated with the filing, prosecution and maintenance of these patent rights.

We are required under the Amended License Agreement to pay Princeton University royalties for licensed products sold by us or our sublicensees. These royalties amount to 3% of the net sales price for licensed products sold by us and 3% of the revenues we receive for licensed products sold by our sublicensees. These royalty rates are subject to renegotiation for products not reasonably conceivable as arising out of the Research Agreement if Princeton University reasonably determines that the royalty rates payable with respect to these products are not fair and competitive. Princeton University shares a portion of these royalties with the University of Southern California under their Interinstitutional Agreement.

We paid Princeton University minimum royalties under the Amended License Agreement in the amounts of \$100,000 for each of 2004, 2003 and 2002. This minimum royalty obligation of \$100,000 per year continues during the term of the Amended License Agreement. We also are required under the Amended License

Agreement to use commercially reasonable efforts to bring the licensed OLED technology to market. However, this requirement is deemed satisfied if we perform our obligations under the Research Agreement and, when that agreement ends, if we invest a minimum of \$800,000 per year in research, development, commercialization or patenting efforts respecting the patent rights licensed to us under the Amended License Agreement.

#### ***Patents We License from Motorola***

In September 2000, we entered into a License Agreement with Motorola whereby Motorola granted us perpetual license rights to what are now 74 issued U.S. patents relating to Motorola's OLED technologies, together with numerous foreign counterparts in various countries. These patents will start expiring in 2012. We have the right to freely sublicense these patents to third parties and, with limited exceptions, Motorola has agreed not to license these patents to others in the OLED industry.

Motorola remains responsible for the filing, prosecution and maintenance of all patent rights licensed to us under the License Agreement, including all associated costs. Motorola is obligated to keep us informed as to the status of these activities.

We are required under the License Agreement to pay Motorola royalties on gross revenues received by us on account of our sales of OLED products or components, or from our sublicensees on account of their sales of OLED products or components, whether or not these products or components are based on inventions claimed in the patent rights licensed from Motorola. We have the option to pay these royalties to Motorola in either all cash or 50% cash and 50% shares of our common stock. We also have minimum royalty obligations to Motorola of \$500,000 in cash or cash and stock for the 2003-2004 period and \$1,000,000 in cash or cash and stock for the 2005-2006 period. Thereafter, we have no minimum royalty obligations to Motorola.

In connection with our execution of the License Agreement, in 2000 we issued to Motorola 200,000 shares of our common stock, 300,000 shares of our Series B Convertible Preferred Stock, and immediately vesting seven-year warrants to purchase an additional 150,000 shares of our common stock at an exercise price of \$21.60 per share. On October 6, 2004, all 300,000 shares of the Series B Convertible Preferred Stock were converted into 418,916 shares of our common stock.

#### ***Intellectual Property Developed under Our Government Contracts***

We and our subcontractors have developed and may continue to develop patentable OLED technology inventions under our various U.S. government contracts and subcontracts. Under these arrangements, we or our subcontractors generally can elect to take title to any patents on these inventions, and to control the manner in which these patents are licensed to third parties. However, the U.S. government reserves rights to these inventions and associated technical data that could restrict our ability to market them to the government for military and other applications, or to third parties for commercial applications. In addition, if the U.S. government determines that we or our subcontractors have not taken effective steps to achieve practical application of these inventions in any field of use in a reasonable time, the government may require that we or our subcontractors license these inventions to third parties in that field of use.

#### ***Trade Secrets and Technical Know-How***

We have accumulated, and continue to accumulate, a substantial amount of valuable trade secret information and technical know-how relating to OLED technologies and materials. Where practicable, we share portions of this information and know-how with display manufacturers and other business partners on a confidential basis. We also employ various methods to protect this information and know-how from unauthorized use or disclosure, although no such methods can afford complete protection. Moreover, because we derive some of this information and know-how from academic institutions such as Princeton University and the University of Southern California, there is an increased potential for public disclosure.

#### **Competition**

The display industry in which we operate is highly competitive. We compete against existing flat panel display technologies, dominated by LCDs, as well as emerging OLED technologies.

### ***Flat Panel Display Competitors***

Numerous domestic and foreign companies have developed or are developing LCD, plasma and other flat panel display technologies that will compete with our OLED display technologies. Companies pursuing these technologies, include, among others, Sony Corporation, Pioneer Corporation, Sharp Corporation, Toshiba Matsushita Display Technology Co., Ltd., Fujitsu, Ltd., Hitachi Displays, Ltd., NEC Corporation, Sanyo Electric Co., Ltd., Samsung Electronics Co., Ltd., Samsung SDI Co., Ltd., LG Electronics, Ltd., LG Phillips LCD Co., Ltd., AU Optronics Corporation, Chi Mei Optoelectronics Corporation, RiTdisplay Corporation, Chunghwa Picture Tubes, Ltd., TECO Optronics Corporation, Toppoly Optoelectronics Corporation and HannStar Display Corporation. Many of these competitors have greater name recognition and more extensive financial, marketing and research resource capabilities than we do.

We believe that OLED display technologies ultimately may be able to overcome certain existing limitations of LCD and other flat panel display technologies, such as high power consumption, costly manufacturing methods, poor contrast ratios and limited viewing angles, for many product applications. However, other companies, including those listed above, may succeed in improving these competing display technologies, or in developing new display technologies, that are superior to OLED display technologies in various respects. We cannot predict the timing or extent to which such improvements or developments may occur.

### ***OLED Competitors***

Eastman Kodak Company has licensed its competing fluorescent OLED technology and other patents for passive matrix OLED display applications to a number of display manufacturers, including several of those with whom we have been working such as Pioneer. Another OLED industry participant, Cambridge Display Technology, Ltd., has licensed and is working with several display manufacturers on its competing polymer OLED technology. In addition, according to industry reports Pioneer, Samsung OLED Co., Ltd., RiTdisplay and Philips Electronics NV, along with other smaller companies, are presently manufacturing OLED products. Eastman Kodak and other competitors of ours, such as Covion Organic Semiconductors GmbH and Idemitsu Kosan Co., are selling OLED materials that compete with our proprietary PHOLED materials.

A number of companies, including many of our flat panel display competitors, together with Seiko Epson Corporation, Fuji Film Co., Ltd., Canon, Inc., Semiconductor Energy Laboratories Co., Dow Chemical Corporation, Dupont Displays, Inc., Toyo Ink Mfg. Co., Ltd., Sumitomo Chemical Co., Ltd., Mitsubishi Chemical Corporation, Covion Organic Semiconductors and Idemitsu Kosan, are engaged in research, development and commercialization activities with respect to OLED technologies and materials. Many of these competitors have greater name recognition and more extensive financial, marketing and research resource capabilities than we do.

Our existing business relationships with Tohoku Pioneer and other display manufacturers suggest that our OLED technologies and materials, particularly our PHOLED technologies and materials, may be adopted by other manufacturers for use in the production of commercial OLED displays. However, Eastman Kodak, Cambridge Display Technology and others may succeed in improving their competing OLED technologies and materials so as to render them superior to ours. We cannot be sure of the extent to which display manufacturers ultimately may adopt our OLED technologies and materials for the production of commercial OLED displays.

### ***Employees***

As of December 31, 2004, we had 46 full-time employees and three part-time employees, none of whom are unionized. We believe that relations with our employees are good.

### ***Our Company History***

Our corporation was organized under the laws of the Commonwealth of Pennsylvania in April 1985. Our business was commenced in June 1994 by a company then known as Universal Display Corporation, which had been incorporated under the laws of the State of New Jersey. On June 22, 1995, a wholly-owned subsidiary of ours merged into this New Jersey corporation. The surviving corporation in this merger became a wholly-owned subsidiary of ours and changed its name to UDC, Inc. Simultaneously with the consummation of this merger, we

changed our name to Universal Display Corporation. UDC, Inc. now functions as an operating subsidiary of ours and has overlapping officers and directors.

#### **Our Compliance with Environmental Protection Laws**

We are not aware of any material effects that compliance with Federal, State or local environmental protection laws or regulations will have on our business. We have not expended material amounts to comply with any environmental protection laws or regulations and do not anticipate having to do so in the foreseeable future.

#### **Our Internet Site**

Our Internet website can be found at [www.universaldisplay.com](http://www.universaldisplay.com). Through our website, free of charge, you can access our Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K and any amendments to those reports that we may file with or furnish to the SEC. These materials are made available through our website as soon as reasonably practicable after we electronically file the material with the SEC.

### **ITEM 2. PROPERTIES**

Our main corporate offices and research and development laboratories are located at 375 Phillips Boulevard in Ewing, New Jersey. On December 1, 2004, we acquired the entire building at which this facility is located. We currently occupy approximately one-half of the 41,000 square feet of space in the building, and are in the process of expanding our operations into an additional 12,000 square feet in the building.

We also lease approximately 1,600 square feet of laboratory space at the Princeton Corporate Plaza in South Brunswick, New Jersey, and 850 square feet of office space in Coeur d'Alene, Idaho.

### **ITEM 3. LEGAL PROCEEDINGS**

We are not currently a party to any legal proceedings of a material nature.

### **ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

We submitted no matters to a vote of our security holders in the fourth quarter of 2004.

## EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth certain information with respect to our executive officers as of March 8, 2004:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Sherwin I. Seligsohn	69	Chairman of the Board and Chief Executive Officer
Steven V. Abramson	53	President, Chief Operating Officer and Director
Sidney D. Rosenblatt	57	Executive Vice President, Chief Financial Officer, Treasurer, Secretary and Director
Julia J. Brown	43	Vice President and Chief Technical Officer

Our Board of Directors has appointed these executive officers to hold office until their successors are duly appointed.

**Sherwin I. Seligsohn** has been our Chief Executive Officer and Chairman of the Board since June 1995. He also served as our President from June 1995 through May 1996. Mr. Seligsohn founded and since has served as the sole Director, President and Secretary of American Biomimetics Corporation, International Multi-Media Corporation, and Wireless Unified Network Systems Corporation. He is also Chairman of the Board and Chief Executive Officer of Global Photonic Energy Corporation. From June 1990 to October 1991, Mr. Seligsohn was Chairman Emeritus of InterDigital Communications, Inc. (InterDigital), formerly International Mobile Machines Corporation. He founded InterDigital and from August 1972 to June 1990 served as its Chairman of the Board. Mr. Seligsohn is a member of the Industrial Advisory Board of the Princeton Institute for the Science and Technology of Materials (PRISM) at Princeton University.

**Steven V. Abramson** has been our President and Chief Operating Officer and a member of our Board of Directors since May 1996. From March 1992 to May 1996, he was Vice President, General Counsel, Secretary and Treasurer of Roy F. Weston, Inc., a worldwide environmental consulting and engineering firm. From December 1982 to December 1991, he held various positions at InterDigital, including General Counsel, Executive Vice President and General Manager of the Technology Licensing Division. Mr. Abramson is a member of the Executive Committee of PRISM and is also a member of the Board of Governors of the United States Display Consortium.

**Sidney D. Rosenblatt** has been our Executive Vice President, Chief Financial Officer, Treasurer and Secretary since June 1995, and has been a member of our Board of Directors since May 1996. Mr. Rosenblatt is the owner of and served as the President of S. Zitner Company from August 1990 through December 1998. From May 1982 to August 1990, Mr. Rosenblatt served as the Senior Vice President, Chief Financial Officer and Treasurer of InterDigital.

**Julia J. Brown, Ph.D.** has been our Vice President and Chief Technical Officer since June 2002. She joined us in June 1998 as our Vice President of Technology Development. From November 1991 to June 1998, Dr. Brown was a Research Department Manager at Hughes Research Laboratories where she directed the pilot line production of high-speed Indium Phosphide-based integrated circuits for insertion into advanced airborne radar and satellite communication systems. Dr. Brown received an M.S. and Ph.D. in Electrical Engineering/Electrophysics at the University of Southern California under the advisement of Professor Stephen R. Forrest. Dr. Brown has served as an Associate Editor of the Journal of Electronic Materials and as an elected member of the Electron Device Society Technical Board. She co-founded an international engineering mentoring program sponsored by the Institute of Electrical and Electronics Engineers and is a Senior Member of the IEEE. Dr. Brown has served on numerous technical conference committees and is presently a member of the Society of Information Display.

## PART II

### ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

#### Our Common Stock

Our common stock is quoted on the Nasdaq National Market under the symbol "PANL." The following table sets forth, for the periods indicated, the high and low closing prices of our common stock as reported on the Nasdaq National Market.

	<u>High Close</u>	<u>Low Close</u>
2004		
First Quarter . . . . .	\$18.00	\$11.50
Second Quarter . . . . .	14.89	10.27
Third Quarter . . . . .	10.73	7.04
Fourth Quarter . . . . .	10.19	8.22
2003		
First Quarter . . . . .	\$ 8.70	\$ 6.33
Second Quarter . . . . .	10.80	8.22
Third Quarter . . . . .	10.74	8.17
Fourth Quarter . . . . .	15.45	10.30

As of March 8, 2005, there were approximately 13,227 holders of record of our common stock.

We have never declared or paid cash dividends on our common stock. We currently intend to retain any future earnings for the operation and expansion of our business. We do not anticipate declaring or paying cash dividends on our common stock in the foreseeable future. Any future payment of cash dividends on our common stock will be at the discretion of our Board of Directors and will depend upon our results of operations, earnings, capital requirements, contractual restrictions and other factors deemed relevant by our Board of Directors.

#### Issuance of Securities to PPG Industries

Pursuant to our Development and License Agreement with PPG Industries, Inc. we are required to issue shares of our common stock and warrants to acquire our common stock to PPG Industries on periodic basis in return for services performed by PPG Industries under that agreement. As previously disclosed, on January 1, 2004 and February 15, 2004, we issued to PPG Industries 157,609 and 9,746 shares of our common stock, respectively, as consideration for services provided by PPG Industries under the agreement. We recorded charges of \$1,626,003 and \$133,715 to research and development expense in 2004 and 2003, respectively, for the issuance of these shares.

Prior to its amendment in December 2004, the Development and License Agreement also required us to issue warrants to PPG Industries to acquire shares of our common stock in return for services performed by PPG Industries under the agreement. The number of shares issuable upon exercise of each warrant was to be based on the number of shares of common stock issued to PPG Industries under the agreement for services provided during the preceding calendar year. On February 15, 2004, we issued to PPG Industries a warrant to acquire 315,461 shares of our common stock at an exercise price of \$10.39 per share. We recorded a charge of \$2,692,418 to research and development expense in 2003 for the issuance of this warrant. The warrant vested immediately and may be exercised for seven years from the date of issuance.

The securities issued to PPG Industries pursuant to the Development and License Agreement were not registered under the Securities Act of 1933, as amended. The issuances were exempt from registration under Section 4(2) of the Securities Act, as not involving any public offering.

## ITEM 6. SELECTED FINANCIAL DATA

The following selected condensed consolidated financial data has been derived from, and should be read in conjunction with, our audited consolidated financial statements and the notes thereto, and with "Management's Discussion and Analysis of Financial Condition and Results of Operations," included elsewhere in this report and incorporated herein by reference.

	Fiscal Year Ended December 31,				
	2004	2003	2002	2001	2000
<b>Operating Results:</b>					
Total revenue . . . . .	\$ 7,006,913	\$ 6,593,193	\$ 2,484,948	\$ 1,252,901	\$ 492,756
Research and development expense . . . . .	16,651,335	17,897,522	15,804,267	12,310,036	7,109,205
General and administrative expense . . . . .	7,052,047	5,766,761	4,754,850	3,915,854	3,261,113
Interest income . . . . .	795,620	162,356	429,356	540,031	348,516
Income tax benefit . . . . .	612,966	—	225,657	—	—
Net loss . . . . .	(15,776,574)	(17,353,205)	(31,019,201)	(16,356,100)	(9,529,046)
Net loss attributable to Common shareholders . . . . .	(15,906,198)	(18,387,507)	(32,972,680)	(18,873,436)	(9,529,046)
Net loss per share, basic and diluted . . . . .	(0.59)	(0.82)	(1.71)	(1.11)	(0.62)
<b>Balance Sheet Data:</b>					
Total assets . . . . .	\$ 73,892,163	\$ 46,201,646	\$ 39,639,216	\$ 48,569,569	\$32,079,794
Current liabilities . . . . .	7,404,278	4,194,776	2,866,759	10,464,188	1,670,016
Capital lease obligations . . . . .	—	3,886	8,599	12,827	16,619
Long-term debt . . . . .	4,200,000	—	—	—	—
Shareholders' equity . . . . .	59,187,885	38,906,870	33,668,571	38,096,782	29,826,804
<b>Other Financial Data:</b>					
Working capital . . . . .	\$ 40,630,913	\$ 23,679,705	\$ 18,541,596	\$ 17,994,232	\$ 9,252,130
Capital expenditures . . . . .	7,418,053	957,328	1,169,945	1,790,564	1,540,577
Acquired technology . . . . .	—	—	—	—	16,924,968
Weighted average Common Shares, basic and diluted . . . . .	26,791,158	22,428,219	19,227,697	16,994,537	15,260,837
Shares of Common Stock outstanding . . . . .	27,903,385	24,196,765	21,525,412	18,093,124	16,440,286

## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the section entitled "Selected Financial Data" in this report and our consolidated financial statements and related notes to this report. This discussion and analysis contains forward-looking statements based on our current expectations, assumptions, estimates and projections. These forward-looking statements involve risks and uncertainties. Our actual results could differ materially from those indicated in these forward-looking statements as a result of certain factors, as more fully discussed in the section below entitled "Factors That May Affect Future Results and Financial Condition."*

### Overview

We are a leader in the research, development and commercialization of organic light emitting diode, or OLED, technologies for use in a variety of flat panel display and other applications. Since 1994, we have been exclusively engaged, and expect to continue to be exclusively engaged, in funding and performing research and development activities relating to OLED technologies and materials, and in attempting to commercialize these technologies and materials. Our revenues are generated through contract research, sales of development and commercial chemicals, technology development and evaluation agreements and license fees. In the future, we anticipate that the revenues from licensing our intellectual property will become a more significant part of our revenue stream.

While we have made significant progress over the past few years developing and commercializing our family of OLED technologies (PHOLED, TOLED, FOLED, etc.) we have incurred significant losses and will continue to do so until our OLED technologies become more widely adopted by flat panel display manufacturers.



We have incurred significant losses since our inception, resulting in an accumulated deficit of \$114,368,210 as of December 31, 2004.

We anticipate fluctuations in our annual and quarterly results of operations due to uncertainty regarding:

- the timing of our receipt of license fees and fees for future technology development and evaluation;
- the timing and volume of sales of our OLED materials for both commercial usage and evaluation purposes;
- the timing and magnitude of expenditures we may incur in connection with our ongoing research and development activities; and
- the timing and financial consequences of our formation of new business relationships and alliances.

### **Critical Accounting Policies and Estimates**

The discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and judgments that affect our reported assets and liabilities, revenues and expenses, and other financial information. Actual results may, under different assumptions and conditions, differ significantly from our estimates.

We believe that our accounting policies related to revenue recognition and deferred license fees, valuation of acquired technology and stock-based compensation as described below, are our “critical accounting policies” as contemplated by the SEC. These policies, which have been reviewed with our Audit Committee, are discussed in greater detail below.

#### ***Revenue Recognition and Deferred License Fees***

Contract research revenues represent reimbursements by the U.S. government for all or a portion of the research and development expenses we incur related to our government contracts. Revenues are recognized proportionally as research and development expenses are incurred or as defined milestones are achieved. In order to ascertain the revenues associated with these contracts for a period, we estimate the proportion of related research and development expenses incurred and whether defined milestones have been achieved. Different estimates would result in different revenues for the period.

We also receive non-refundable advance payments under certain of our development and technology evaluation agreements. These payments are deferred until a license agreement is executed or negotiations have ceased and there is no likelihood of executing a license agreement with the other party. If a license agreement is executed, these revenues will be recorded over the expected life of the licensed technology; otherwise, they will be recorded at the time negotiations with the other party show no further likelihood of success. If we estimate differently the expected life of this licensed technology, reported revenue during the relevant period will differ. To date, no deferred license fees have been recognized as revenue. As of December 31, 2004, \$4,866,667 was recorded as deferred revenue.

Royalty revenue is received from OVPD equipment sold under a development and license agreement with Aixtron AG. Revenue is recognized upon notification of equipment sold and royalties due from Aixtron AG.

#### ***Valuation of Acquired Technology***

We regularly review our acquired OLED technologies for events or changes in circumstances that might indicate the carrying value of these technologies may not be recoverable. Factors considered important that could cause impairment include, among others, significant changes in our anticipated future use of these technologies and our overall business strategy as it pertains to these technologies, particularly in light of patents owned by others in the same field of use. As of December 31, 2004, we believe that no revision of the remaining useful lives or write-down of our acquired technology was required for 2004, nor was such a revision needed in 2003 or 2002. If such a write-down is required in the future, it could be for up to \$9,709,631 — the net book value of our acquired technology as of December 31, 2004.

### ***Valuation of Stock-Based Compensation***

We account for our stock-based compensation (see Note 2 of the Notes to Consolidated Financial Statements) under Accounting Principles Board Opinion (APB) No. 25, "Accounting for Stock Issued to Employees," under which no compensation cost is recognized for options issued to employees at fair market value on the date of grant. In 1995, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) No. 123, "Accounting for Stock-Based Compensation," as amended by SFAS No. 148. SFAS No. 123 establishes a fair value-based method of accounting for stock-based compensation plans. SFAS No. 123 requires that a company's financial statements include certain disclosures about stock-based employee compensation arrangements regardless of the method used to account for the plan. We account for our stock option and warrant grants to non-employees in exchange for goods or services in accordance with SFAS No. 123 and Emerging Issues Task Force No. 96-18 (EITF 96-18). SFAS No. 123 and EITF 96-18 require that we account for our option and warrant grants to non-employees based on the fair value of the options and warrants granted.

We use the Black-Scholes option-pricing model to estimate the fair value of options we have granted for purposes of making the disclosure required by SFAS No. 123. In order to calculate the fair value of the options, assumptions are made for certain components of the model, including risk-free interest rate, volatility, expected dividend yield rate and expected option life. Although we use available resources and information when setting these assumptions, changes to the assumptions could cause significant adjustments to the valuation.

### **Results of Operations**

#### ***Year Ended December 31, 2004 Compared to Year Ended December 31, 2003***

We had a net loss attributable to holders of our common stock of \$15,906,198 (or \$0.59 per diluted share) for the year ended December 31, 2004, compared to a net loss attributable to holders of our common stock of \$18,387,507 (or \$0.82 per diluted share) for the year ended December 31, 2003. The decrease was primarily due to:

- increased contract revenues by \$413,720,
- an increase in interest income of \$633,264 and income tax benefit of \$612,966,
- and a decrease in deemed dividends of \$404,232.

Our revenues were \$7,006,913 for the year ended December 31, 2004, compared to \$6,593,193 for the year ended December 31, 2003. We earned \$2,621,636 in contract research revenue from the U.S. government in 2004, compared to \$1,420,984 in 2003. The increase in 2004 was primarily due to:

- our commencement of work under seven new or continuing government contracts; and
- final billings on two Phase I contracts and one subcontract.

In 2003, contract revenue was derived from eight government contracts, three of which were completed by the second quarter of 2003 and one which commenced in the third quarter of 2003.

We earned \$2,484,070 from our sales of OLED materials for evaluation purposes in 2004, compared to \$2,295,009 for corresponding sales in 2003. The increase was mainly due to an increased volume of OLED materials purchased for evaluation by potential OLED display manufacturers, including our technology development and evaluation partners. We commenced sales of OLED materials for evaluation purposes in 2001.

Our commercial chemical revenue and license fees for 2004 were \$147,600 and \$344,400, respectively, compared to \$68,160 and 159,040 for the corresponding period in 2003. The increase was due to continued and expanded sales of one of our proprietary PHOLED materials to a customer for use in the exterior sub-display of a mobile phone being sold in Japan.

We recorded royalty revenue of \$58,670 in 2004 from sales of OVPD equipment by the exclusive licensee of our OVPD technology, Aixtron AG. We had no corresponding royalty revenue in 2003.

We recognized \$1,350,000 in technology development revenue in 2004 in connection with two technology development and evaluation agreements, one of which was executed in October 2002 and the other in September 2003, compared to \$2,650,000 in 2003. The latter of these two agreements, which represented \$1,650,000 of the \$2,650,000 in 2003, expired in accordance with its terms at the end of March 2004. The amount and timing of our receipt of fees for technology development services is difficult to predict due to the early stage of the OLED industry.

We incurred research and development expenses of \$16,651,335 for the year ended December 31, 2004, compared to \$17,897,522 for the year ended December 31, 2003. The decrease was mainly attributable to a decrease of \$2,394,267 in charges in connection with our Development and License Agreement with PPG Industries (see Note 7 of the Notes to Consolidated Financial Statements), offset in part by an increase in additional employees, salary increases and patent legal costs.

General and administrative expenses were \$7,052,047 for the year ended December 31, 2004, compared to \$5,766,761 for the year ended December 31, 2003. The increase was mainly due to:

- increased salaries in connection with accruals for year-end stock bonuses; and
- increased costs as a result of stock issuances to members of the Board of Directors for 2003 Board and Committee service.

Interest income increased to \$795,620 for the year ended December 31, 2004, compared to \$162,356 for the year ended December 31, 2003. This was the result of increased cash balances from our August 2003 and March 2004 registered offerings of common stock.

During 2004, we sold approximately \$8 million of our state-related income tax net operating losses (NOLs) to New Jersey under the Technology Tax Certificate Transfer Program. In 2004, we received proceeds of \$612,966 for the sale of these NOLs and recorded it as an income tax benefit.

Deemed dividends were \$129,624 for the year ended December 31, 2004, compared to \$1,034,302 for the year ended December 31, 2003. In 2004, we issued a warrant to purchase shares of our common stock and completed an offering that were deemed dilutive under the terms of a warrant we had previously issued and resulted in the reduction of the exercise price of that warrant and an increase in the number of shares issuable under that warrant. We treated this occurrence as a deemed dividend of \$46,176. In 2003, we recorded a deemed dividend in the amount of \$546,622 for similar reasons.

In September 2004, the conversion price of the Series B Convertible Preferred Stock we issued to Motorola, Inc. in September 2000 was adjusted in accordance with the Certificate of Designations for that stock. We accounted for this adjustment as a contingent beneficial conversion feature (CBCF). As a result, we recorded the CBCF as a deemed dividend in the amount of \$83,448. In September 2003, we recorded a deemed dividend in the amount of \$487,680 for similar reasons.

#### ***Year Ended December 31, 2003 Compared to Year Ended December 31, 2002***

We had a net loss attributable to holders of our common stock of \$18,387,507 (or \$0.82 per diluted share) for the year ended December 31, 2003, compared to a net loss attributable to holders of our common stock of \$32,972,680 (or \$1.71 per diluted share) for the year ended December 31, 2002. The decrease in net loss attributable to holders of our common stock was primarily due to:

- an increase in total revenue, as described below; and
- a decrease in non-cash expense relating to the debt conversion and extinguishment of convertible promissory notes we issued in August 2001, as well as a decrease in non-cash interest expense (see Note 9 of the Notes to Consolidated Financial Statements).

Our revenues were \$6,593,193 for the year ended December 31, 2003, compared to \$2,484,948 for the year ended December 31, 2002. The increase was primarily due to:

- additional payments under technology development and evaluation agreements and additional purchases of materials by our development partners; and

- the provision of OLED material to a customer for its use in the manufacture of commercial OLED displays under an arrangement entered into in 2003.

We earned \$2,295,009 from sales of our OLED materials for evaluation purposes for the year ended December 31, 2003, compared to \$833,194 for the year ended December 31, 2002. The increase was mainly due to an increased volume of OLED materials purchased for evaluation by potential OLED display manufacturers, including our current development partners.

We entered into an arrangement in the third quarter of 2003 under which we began supplying one of our proprietary OLED materials to a customer for use in the manufacture of commercial passive matrix OLED displays. As a result, we earned \$68,160 in commercial chemical revenue and \$159,040 in license fees in connection with this arrangement for the year ended December 31, 2003. There were no such arrangements in effect during 2002.

We recognized \$2,650,000 in technology development revenue for the year ended December 31, 2003, compared to \$182,796 for the year ended December 31, 2002. The increase related to new and continuing technology development and evaluation agreements in 2003.

We earned \$1,420,984 in contract research revenue from the U.S. government for the year ended December 31, 2003, compared to \$1,468,958 for the year ended December 31, 2002. The dollar value and the number of our government contracts remained relatively constant during 2002 and 2003, and several of these contracts are expected to continue into 2005.

We incurred research and development expenses of \$17,897,522 for the year ended December 31, 2003, compared to \$15,804,267 for the year ended December 31, 2002. The increase was primarily a result of:

- an increase of \$973,657 in non-cash operating expense associated with our Development and License Agreement with PPG Industries, due to the increased market price of our common stock;
- an increase of \$312,919 in costs associated with the increased number of patents we filed in 2003 as compared to 2002;
- an increase of \$641,451 in costs for the further development and operation of our facility in Ewing, New Jersey; and
- stock performance bonuses of \$356,311 to research and development employees. No such bonuses were awarded in 2002.

The increase was offset by a \$289,900 decrease in costs associated with our Scientific Advisory Board (SAB), due to the timing of payments to members of our SAB.

We incurred general and administrative expenses of \$5,766,761 for the year ended December 31, 2003, compared to \$4,754,850 for the year ended December 31, 2002. The increase resulted from an increase of \$1,125,887 in costs associated with new and existing personnel and with employee stock performance bonus awards of \$661,775. There were no such stock performance bonus awards issued in 2002.

In September 2002, \$7,000,002 of the \$15,000,000 in convertible promissory notes that we had issued in August 2001 (the Notes) were converted into shares of our common stock, with the remaining amount being repaid in cash. As of the date of conversion and repayment, the \$15,000,000 face value of the Notes exceeded their then-carrying value due to an unamortized original issuance discount (OID) and beneficial conversion feature (BCF) on the Notes. As a result, upon the conversion and repayment of the Notes, we recognized a non-cash debt conversion and extinguishment expense of \$10,011,780 related to the unamortized portion of the OID and BCF and the intrinsic value of the Notes repurchased. During 2003, there were no such expenses (see Note 9 of the Notes to Consolidated Financial Statements).

We had no interest expense for the year ended December 31, 2003, compared to \$3,298,589 for the year ended December 31, 2002. The decrease was primarily due to the retirement and conversion of the Notes in September 2002 and the fact that we incurred no new debt in 2003. This compares to 2002, during which we recorded the amortization of OID and BCF of the Notes (see Note 9 of the Notes to Consolidated Financial Statements).

In September 2003, the conversion price of the Series B Convertible Preferred Stock we issued to Motorola, Inc. in September 2000 was adjusted in accordance with the Certificate of Designations for that stock. We accounted for this adjustment as a contingent beneficial conversion feature (CBCF). As a result, we recorded the CBCF as a deemed dividend in the amount of \$487,680. In 2002, the adjustment resulted in a deemed dividend of \$1,953,479 (see Note 8 of the Notes to Consolidated Financial Statements).

In August 2003, we completed an offering that was deemed dilutive under the terms of certain warrants we had previously issued and resulted in a reduction of the exercise prices of these warrants and an increase in the number of shares issuable under certain of these warrants. We treated and recorded this occurrence as a deemed dividend in the amount of \$546,622. No such deemed dividends were recorded in 2002. The weighted-average anti-dilution provisions of these warrants will be triggered in the future if we issue additional shares below the various exercise prices of these warrants.

### **Liquidity and Capital Resources**

As of December 31, 2004, we had cash and cash equivalents of \$18,930,581, short-term investments of \$26,258,463 and investments in certificates of deposit and other liquid instruments with an original maturity of more than one year of \$2,290,451. This compares to cash and cash equivalents of \$14,070,207, short-term investments of \$12,811,704 and investments in certificates of deposit and other liquid instruments with an original maturity of more than one year of \$3,255,574 as of December 31, 2003. The increase in cash and cash equivalents and short-term and long-term investments of \$17,342,010 was primarily due to an increase in funds from our offering of common stock in March 2004, less cash used in operations and restricted cash that is being used as collateral on a loan we entered into in connection with acquiring the building and property at which our main facility is located.

Cash used in operating activities was \$6,965,083 in 2004, as compared to \$ 5,797,609 in 2003. The increase was mainly due to an increase in accounts receivable. Accounts receivable was \$2,588,279 as of December 31, 2004, compared to \$805,602 as of December 31, 2003. The increase in receivables resulted from an increase in contract revenue and from our entering into a new joint development agreement in December 2004 for which we did not receive payment until after year end. The latter also resulted in an increase in deferred revenue; however, it was offset by the recognition of revenue during 2004 on two technology development and evaluation agreements which were previously classified as deferred revenue.

In March 2004, we completed a public offering of 2,500,000 shares of our common stock at a price of \$12.00 per share. The offering resulted in proceeds to us of \$28,036,218; net of \$1,963,782 in costs associated with completion of the offering. In April 2004, we sold an additional 50,000 shares of our common stock at \$12.00 per share to cover over-allotments. The sale of these shares resulted in proceeds to us of \$486,031, net of \$113,968 in associated costs.

Working capital increased to \$40,630,913 as of December 31, 2004, from working capital of \$23,679,705 as of December 31, 2003. The net increase was due primarily to the completion of the March 2004 public offering of our common stock.

We anticipate, based on our internal forecasts and assumptions relating to our operations (including, among others, assumptions regarding our working capital requirements, the progress of our research and development efforts, the availability of sources of funding for our research and development work, and the timing and costs associated with the preparation, filing, prosecution, maintenance and enforcement of our patents and patent applications), that we have sufficient cash, cash equivalents and short-term investments to meet our obligations into 2006. We believe that potential additional financing sources for us include long-term and short-term borrowings, public and private sales of our equity and debt securities and the receipt of cash upon the exercise of warrants and options. We have an effective shelf registration statement that would enable us to offer, from time to time, up to \$44,725,524 of our common stock, preferred stock, debt securities and other securities, subject to market conditions and other factors. It should be noted, however, that additional funding may be required in the future for research, development and commercialization of our OLED technologies and materials, to obtain and maintain patents respecting these technologies and materials, and for working capital and other purposes, the timing and amount of which are difficult to ascertain. For example, under our 1997 Research Agreement with Princeton University, we are required to pay Princeton University \$1,495,599 per year through July 2007. There

can be no assurance that additional funds will be available to us when needed, on commercially reasonable terms or at all.

### Contractual Obligations

As of December 31, 2004, we had the following contractual commitments:

Contractual Obligations	Total	Payments Due by Period			
		Less than 1 year	1-3 years	3-5 years	More than 5 years
Long-term debt . . . . .	\$ 4,500,000	\$ 300,000	\$ 900,000	\$3,300,000	\$ —
Operating lease obligations . . . . .	31,286	29,841	1,445	—	—
Capital lease obligations . . . . .	—	—	—	—	—
Purchase obligations . . . . .	—	—	—	—	—
Other long-term liabilities reflected on the balance sheet under GAAP . . . . .	—	—	—	—	—
Other Obligations:					
Sponsored research obligation . . . . .	3,863,631	1,495,599	2,368,032	—	—
Minimum royalty obligation . . . . .	2,100,000	600,000	1,300,000	200,000	\$100,000/year <sup>(1)</sup>
Total . . . . .	\$10,494,917	\$2,425,440	\$4,569,477	\$3,500,000	\$100,000/year <sup>(1)</sup>

(1) Under our Amended License Agreement with Princeton University and the University of Southern California, we are obligated to pay Princeton University minimum royalties of \$100,000 per year until such time as the agreement is no longer in effect.

### Off-Balance Sheet Arrangements

As of December 31, 2004, we had no off-balance sheet arrangements in the nature of guarantee contracts, retained or contingent interests in assets transferred to unconsolidated entities (or similar arrangements serving as credit, liquidity or market risk support to unconsolidated entities for any such assets), or obligations (including contingent obligations) arising out of variable interests in unconsolidated entities providing financing, liquidity, market risk or credit risk support to us, or that engage in leasing, hedging or research and development services with us.

### Recently Issued Accounting Pronouncements

In November 2004, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standard (SFAS) No. 151, Inventory Costs, which amends the guidance in Accounting Research Bulletin (ARB) No. 43, Chapter 4, Inventory Pricing, to clarify the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material. SFAS No. 151 requires that those items be recognized as current-period charges regardless of whether they meet the criterion of “so abnormal.” In addition, SFAS No. 151 requires allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. We believe the adoption of SFAS No. 151 will not have an impact on our financial statements.

In December 2004, the FASB issued SFAS No. 153, Exchanges of Nonmonetary Assets. SFAS No. 153 is an amendment to APB Opinion No. 29, Accounting for Nonmonetary Transactions. SFAS No. 153 eliminates the exception for nonmonetary exchanges of similar productive assets and replaces it with a general exception for exchanges of nonmonetary assets that do not have commercial substance. The provision of SFAS No. 153 is effective for nonmonetary asset exchanges occurring in fiscal periods beginning after June 15, 2005. We believe the adoption of SFAS No. 153 will not have an impact on our financial statements.

In December 2004, the FASB issued SFAS No. 123R, Share-Based Compensation, which supersedes Accounting Principles Board (APB) Opinion No. 25, Accounting for Stock Issued to Employees, and its related implementation guidance. SFAS No. 123R focuses primarily on accounting for transactions in which an entity obtains employee services through share-based payment transactions. SFAS No. 123R requires a public entity to measure the cost of employee services received in exchange for the award of equity investments based on the fair

value of the award at the date of grant. The cost will be recognized over the period during which an employee is required to provide services in exchange for the award. SFAS No. 123R is effective as of the beginning of the first interim or annual reporting period that begins after June 15, 2005. The impact on net earnings as a result of the adoption of SFAS No. 123R, from a historical perspective, is set forth in Note 2 to the Notes to Consolidated Financial Statements. We are currently evaluating the provisions of SFAS No. 123R and will adopt it in 2005, as required. We believe the adoption of SFAS No. 123R will have a significant impact on our financial statements.

#### **FACTORS THAT MAY AFFECT FUTURE RESULTS AND FINANCIAL CONDITION**

*The following factors, as well as other factors affecting our operating results and financial condition, could cause our actual future results and financial condition to differ materially from those projected.*

##### **We have a history of losses and may never be profitable.**

Since inception, we have generated limited revenues while incurring significant losses. We expect to incur losses for the foreseeable future and until such time, if ever, as we are able to achieve sufficient levels of revenue from the commercial exploitation of our OLED technologies and materials to support our operations. You should note, however, that:

- OLED technologies may never be adopted for broad commercial usage;
- markets for flat panel displays utilizing OLED technologies may be limited; and
- we may never generate sufficient revenues from the commercial exploitation of our OLED technologies and materials to become profitable.

##### **We may require additional funding in the future in order to continue our business.**

Our capital requirements have been and will continue to be significant. We may require additional funding in the future for the research, development and commercialization of our OLED technologies and materials, to obtain and maintain patents and other intellectual property rights in these technologies and materials, and for working capital and other purposes, the timing and amount of which are difficult to ascertain. Our cash on hand may not be sufficient to meet all of our future needs. When we need additional funds, such funds may not be available on commercially reasonable terms or at all. If we cannot obtain more money when needed, our business might fail. Additionally, if we attempt to raise money in an offering of shares of our common stock, preferred stock, warrants or depositary shares, or if we engage in acquisitions involving the issuance of such securities, the issuance of these shares will dilute our then-existing shareholders.

##### **If our OLED technologies and materials are not feasible for broad-based product applications, we may never generate revenues sufficient to support ongoing operations.**

Our business strategy is to license our OLED technologies and sell our OLED materials to display manufacturers for incorporation into the flat panel display products that they sell. Consequently, our success depends on the ability and willingness of these manufactures to develop, manufacture and sell commercial flat panel display products integrating our technologies and materials.

Before display manufacturers will agree to utilize our OLED technologies and materials for wide-scale commercial production, they will likely require us to demonstrate to their satisfaction that our OLED technologies and materials are feasible for broad-based product applications. This, in turn, may require additional advances in our research and development efforts, as well as those of others, for applications in a number of areas, including:

- device reliability;
- the development of OLED materials with sufficient lifetimes, brightness and color coordinates for full color OLED displays; and
- issues related to scalability and cost-effective fabrication technologies for product applications.

Our research and development efforts remain subject to all of the risks associated with the development of new products based on emerging and innovative technologies, including, without limitation, unanticipated

technical or other problems and the possible insufficiency of funds for completing development of these products. Technical problems may result in delays and cause us to incur additional expenses that would increase our losses. If we cannot complete research and development of our OLED technologies and materials successfully, or if we experience delays in completing research and development of our OLED technologies and materials for use in potential commercial applications, particularly after incurring significant expenditures, our business may fail.

**Even if our OLED technologies are technically feasible, they may not be adopted by display manufacturers.**

The potential size, timing and viability of market opportunities targeted by us are uncertain at this time. Market acceptance of our OLED technologies will depend, in part, upon these technologies providing benefits comparable to cathode ray tube, or CRT, display and liquid crystal display, or LCD, technologies (the current standard display technologies) at an advantageous cost to manufacturers, and the adoption of products incorporating these technologies by consumers. Many potential licensees of our OLED technologies manufacture flat panel displays utilizing competing technologies, and may, therefore, be reluctant to redesign their products or manufacturing processes to incorporate our OLED technologies.

During the entire product development process for a new flat panel display product, we face the risk that our technology will fail to meet the manufacturer's technical, performance or cost requirements or will be replaced by a competing product or alternative technology. For example, we are aware that some of our licensees and prospective licensees have entered into arrangements with our competitors regarding the development of competing technologies, including the potential production of polymer-based OLED displays. Even if we offer technologies that are satisfactory to a display manufacturer, the manufacturer may choose to delay or terminate its product development efforts for reasons unrelated to our technologies.

Mass production of OLED displays will require the availability of suitable manufacturing equipment, components and materials, many of which are available only from a limited number of suppliers. In addition, there may be a number of other technologies that display manufacturers need to utilize to be used in conjunction with our OLED technologies in order to bring OLED displays and products containing them to the market. Thus, even if our OLED technologies are a viable alternative to competing flat panel display technologies, if display manufacturers are unable to obtain access to this equipment and these components, materials and other technologies, they may not utilize our OLED technologies.

**There are numerous potential alternatives to OLEDs for flat panel displays, which may limit our ability to commercialize our OLED technologies and materials.**

The flat panel display market is currently, and will likely continue to be for some time, dominated by displays based on LCD technology. Numerous companies are making substantial investments in, and conducting research to improve characteristics of, LCDs. Plasma and other competing flat panel display technologies have been, or are being, developed. Advances in LCD technology or any of these other technologies may overcome their current limitations and permit them to become the leading technologies for flat panel displays, either of which could limit the potential market for flat panel displays utilizing our OLED technologies and materials. This, in turn, would cause display manufacturers to avoid entering into commercial relationships with us, or to terminate or not renew their existing relationships with us.

**Other OLED technologies may be more successful or cost-effective than ours, which may limit the commercial adoption of our OLED technologies and materials.**

Our competitors have developed OLED technologies that differ from or compete with our OLED technologies. In particular, Eastman Kodak Company's competing fluorescent OLED technology, which entered the marketplace prior to ours, may become entrenched in the flat panel industry before our OLED technologies have a chance to become widely utilized. Moreover, our competitors may succeed in developing new OLED technologies that are more cost-effective or have fewer display limitations than our OLED technologies. If our OLED technologies, and particularly our phosphorescent OLED technology, are unable to capture a substantial portion of the OLED display market, our business strategy may fail.



**Many of our competitors have greater resources, which may make it difficult for us to compete successfully against them.**

The flat panel display industry is characterized by intense competition. Many of our competitors have better name recognition and greater financial, technical, marketing, personnel and research capabilities than us. Because of these differences, we may never be able to compete successfully in the OLED display market.

**The flat panel display industry has historically experienced significant downturns, which may adversely affect the demand for and pricing of our OLED technologies and materials.**

Because we do not sell any display products to consumers, our success depends upon the ability and continuing willingness of our display manufacturer licensees to market commercial products integrating our technologies and materials, and the widespread acceptance of those products. Any slowdown in the demand for our licensees' products would adversely affect our royalty revenues and thus our business. The markets for our display manufacturer licensees' products are highly competitive, with pressure on prices and profit margins due largely to additional and growing capacity from flat panel display industry competitors. Success in the market for end-user products that may integrate our OLED technologies and materials also depends on factors beyond the control of our licensees and us, including the cyclical and seasonal nature of the end-user markets that our licensees serve, as well as industry and general economic conditions.

The flat panel display industry has experienced significant periodic downturns, often in connection with, or in anticipation of, declines in general economic conditions. These downturns have been characterized by lower product demand, production overcapacity and erosion of average selling prices. Our business strategy is dependent on display manufacturers building and selling displays that incorporate our OLED technologies and materials. Industry-wide fluctuations and downturns in the demand for flat panel displays, and OLED displays in particular, could cause significant harm to our business.

**If our research partners fail to make advances in their research, or if they terminate or elect not to renew their relationships with us, we might not succeed in commercializing our OLED technologies and materials.**

Further advances in our OLED technologies and materials depend, in part, on the success of the research and development work conducted by our research partners. We cannot be certain that our research partners will make additional advances in the research and development of these technologies and materials. Moreover, although we fund OLED technology research, the scope of and technical aspects of this research and the resources and efforts directed to this research are in large part subject to the control of our research partners.

Our most significant research and development relationships are with Princeton University and the University of Southern California. Our Research Agreement with Princeton University expires in July 2007 and both this agreement and our Amended License Agreement with Princeton University and the University of Southern California (the agreement under which we license our key OLED technology patents) can be terminated for various reasons. For example, the Research Agreement provides that if Dr. Stephen R. Forrest, the principal investigator for our research program with Princeton University, is unavailable to continue to serve in this capacity, because he is no longer associated with Princeton University or for any other reason, and a successor acceptable to both us and Princeton University is not available, Princeton University has the right to terminate the Research Agreement without impacting the Amended License Agreement. Termination of the Research Agreement would negatively affect our ability to research, develop and commercialize our OLED technologies and materials.

**If we cannot form and maintain lasting business relationships with OLED display manufacturers, our business strategy will fail.**

Our business strategy ultimately depends upon our development and maintenance of commercial licensing and material supply relationships with high-volume manufacturers of OLED displays. As of December 31, 2004, we had entered into only two such relationships, one with Dupont Displays, Inc. and one with Tohoku Pioneer Corporation. All of our other relationships with display manufacturers currently are limited to technology development and the evaluation of our OLED technologies and materials for possible use in commercial

production. Some or all of these relationships may not succeed or, even if they are successful, may not result in the display manufacturers entering into commercial licensing and material supply relationships with us.

Under our existing technology development and evaluation agreements, we are working with display manufacturers to incorporate our technologies into their products for the commercial production of OLED displays. However, these technology development and evaluation agreements typically last for limited periods of time, such that our relationships with the display manufacturers will expire unless they continually are renewed. The display manufacturers may not agree to renew their relationships with us on a continuing basis. In addition, we regularly continue working with display manufacturers evaluating our OLED technologies and materials after our existing agreements with them have expired while we are attempting to negotiate contract extensions or new agreements with them. Should our relationships with the display manufacturers not continue or be renewed, our business would suffer.

Our ability to enter into additional commercial licensing and material supply relationships, or to maintain our existing technology development and evaluation relationships, may require us to make financial or other commitments. We might not be able, for financial or other reasons, to enter into or continue these relationships on commercially acceptable terms, or at all. Failure to do so may cause our business strategy to fail.

**Conflicts may arise with our licensees or joint development partners, resulting in renegotiation or termination of, or litigation related to, our agreements with them. This would adversely affect our revenues.**

Conflicts could arise between us and our licensees or joint development partners as to royalty rates, milestone payments or other commercial terms. Similarly, we may disagree with our licensees or joint development partners as to which party owns or has the right to commercialize intellectual property that is developed during the course of the relationship or as to other non-commercial terms. If such a conflict were to arise, a licensee or joint development partner might attempt to compel renegotiation of certain terms of their agreement or terminate their agreement entirely, and we might lose the royalty revenues and other benefits of the agreement. Either we or the licensee or joint development partner might initiate litigation to determine commercial obligations, establish intellectual property rights or resolve other disputes under the agreement. Such litigation could be costly to us and require substantial attention of management. If we were unsuccessful in such litigation, we could lose the commercial benefits of the agreement, be liable for other financial damages and suffer losses of intellectual property or other rights that are the subject of dispute. Any of these adverse outcomes could cause our business strategy to fail.

**We rely solely on PPG Industries to manufacture the OLED materials we use and sell to display manufacturers.**

Our business prospects depend significantly on our ability to obtain proprietary OLED materials for our own use and for sale to display manufacturers. Our Development and License Agreement with PPG Industries, Inc. provides us with a source for these materials for research, development and evaluation purposes, and our Supply Agreement with PPG Industries provides us with a source for these materials for commercial purposes. However, the Development and License Agreement is currently scheduled to expire at the end of 2005 and the Supply Agreement is currently scheduled to expire at the end of 2007. Our inability to continue obtaining these OLED materials from PPG Industries or another source would have a material adverse effect on our revenues from sales of these materials, as well as on our ability to perform research and development work and to support those display manufacturers currently evaluating our OLED technologies and materials for possible commercial use.

**If we cannot obtain and maintain appropriate patent and other intellectual property rights protection for our OLED technologies and materials, our business will suffer.**

The value of our OLED technologies and materials is dependent on our ability to secure and maintain appropriate patent and other intellectual property rights protection. Although we own or license many patents respecting our OLED technologies and materials that have already been issued, there can be no assurance that additional patents applied for will be obtained, or that any of these patents, once issued, will afford commercially significant protection for our OLED technologies and materials, or will be found valid if challenged. Moreover, we have not obtained patent protection for some of our OLED technologies and materials in all foreign countries in which OLED displays or materials might be manufactured or sold. In any event, the patent laws of other

countries may differ from those of the United States as to the patentability of our OLED technologies and materials and the degree of protection afforded.

The strength of our current intellectual property position results primarily from the essential nature of our fundamental patents covering phosphorescent OLED devices and certain materials utilized in these devices. These patents begin expiring in 2017. While we hold a wide range of additional patents and patent applications whose expiration dates extend (and in the case of patent applications, will extend) beyond 2017, many of which are also of key importance in the OLED industry, none are of an equally essential nature as our fundamental patents, and therefore our competitive position after 2017 may be less certain.

We may become engaged in litigation to protect or enforce our patent and other intellectual property rights, or in International Trade Commission proceedings to abate the importation of goods that would compete unfairly with those of our licensees. In addition, we may have to participate in interference or reexamination proceedings before the U.S. Patent and Trademark Office, or in opposition, nullity or other proceedings before foreign patent offices, with respect to our patents or patent applications. All of these actions would place our patents and other intellectual property rights at risk and may result in substantial costs to us as well as a diversion of management attention. Moreover, if successful, these actions could result in the loss of patent or other intellectual property rights protection for the key OLED technologies and materials on which our business depends.

In addition, we rely in part on unpatented proprietary technology, and others may independently develop the same or similar technology or otherwise obtain access to our unpatented technology. To protect our trade secrets, know-how and other proprietary information, we require employees, consultants, financial advisors and strategic partners to enter into confidentiality agreements. These agreements may not ultimately provide meaningful protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use, misappropriation or disclosure of those trade secrets, know-how or other proprietary information. In particular, we may not be able to fully or adequately protect our proprietary information as we conduct discussions with potential strategic partners. If we are unable to protect the proprietary nature of our technology, it will harm our business.

**We or our licensees may incur substantial costs or lose important rights as a result of litigation or other proceedings relating to our patent and other intellectual property rights.**

There are a number of other companies and organizations that have been issued patents and are filing patent applications relating to OLED technologies and materials, including Eastman Kodak Company, Cambridge Display Technology, Fuji Film Co., Ltd., Canon, Inc., Pioneer Corporation, Semiconductor Energy Laboratories Co. and Mitsubishi Chemical Corporation. As a result, there may be issued patents or pending patent applications of third parties that would be infringed by the use of our OLED technologies or materials, thus subjecting our licensees to possible suits for patent infringement in the future. Such lawsuits could result in our licensees being liable for damages or require our licensees to obtain additional licenses that could increase the cost of their products, which might have an adverse affect on their sales and thus our royalties or cause them to seek to renegotiate our royalty rates.

In addition, in the future we may assert our intellectual property rights by instituting legal proceedings against others. We cannot assure you that we will be successful in enforcing our patents in any lawsuits we may commence. Defendants in any litigation we may commence to enforce our patents may attempt to establish that our patents are invalid or are unenforceable. Thus, any patent litigation we commence could lead to a determination that one or more of our patents are invalid or unenforceable. If a third party succeeds in invalidating one or more of our patents, that party and others could compete more effectively against us. Our ability to derive licensing revenues from products or technologies covered by these patents could also be adversely affected.

Whether our licensees are defending the assertion of third-party intellectual property rights against their businesses arising as a result of the use of our technology, or we are asserting our own intellectual property rights against others, such litigation can be complex, costly, protracted and highly disruptive to our or our licensees' business operations by diverting the attention and energies of management and key technical personnel. As a result, the pendency or adverse outcome of any intellectual property litigation to which we or our licensees are

subject could disrupt business operations, require the incurrence of substantial costs and subject us or our licensees to significant liabilities, each of which could severely harm our business.

Plaintiffs in intellectual property cases often seek injunctive relief in addition to money damages. Any intellectual property litigation commenced against our licensees could force them to take actions that could be harmful to their business and thus to our royalties, including the following:

- stop selling their products that incorporate or otherwise use technology that contains our allegedly infringing intellectual property;
- attempt to obtain a license to the relevant third-party intellectual property, which may not be available on reasonable terms or at all; or
- attempt to redesign their products to remove our allegedly infringing intellectual property to avoid infringement of the third-party intellectual property.

If our licensees are forced to take any of the foregoing actions, they may be unable to manufacture and sell their products that incorporate our technology at a profit or at all. Furthermore, the measure of damages in intellectual property litigation can be complex, and is often subjective or uncertain. If our licensees were to be found liable for infringement of proprietary rights of a third party, the amount of damages they might have to pay could be substantial and is difficult to predict. Decreased sales of our licensees' products incorporating our technology would have an adverse effect on our royalty revenues under existing licenses. Any necessity to procure rights to the third-party technology might cause our existing licensees to renegotiate the royalty terms of their license with us to compensate for this increase in their cost of production or, in certain cases, to terminate their license with us entirely. Were this renegotiation to occur, it would likely harm our ability to compete for new licensees and have an adverse effect on the terms of the royalty arrangements we could enter into with any new licensees.

As is commonplace in technology companies, we employ individuals who were previously employed at other technology companies. To the extent our employees are involved in research areas that are similar to those areas in which they were involved at their former employers, we may be subject to claims that such employees or we have, inadvertently or otherwise, used or disclosed the alleged trade secrets or other proprietary information of the former employers. Litigation may be necessary to defend against such claims. The costs associated with these actions or the loss of rights critical to our or our licensees' business could negatively impact our revenues or cause our business to fail.

**The U.S. government has rights to our OLED technologies that might prevent us from realizing the benefits of these technologies.**

The U.S. government, through various government agencies, has provided and continues to provide funding to us, Princeton University and the University of Southern California for research activities related to certain aspects of our OLED technologies. Because we have been provided with this funding, the government has rights to these OLED technologies that could restrict our ability to market them to the government for military and other applications, or to third parties for commercial applications. Moreover, if the government determines that we have not taken effective steps to achieve practical application of these OLED technologies in any field of use in a reasonable time, the government could require us to grant licenses to other parties in that field of use. Any of these occurrences would limit our ability to obtain the full benefits of our OLED technologies.

**If we cannot keep our key employees or hire other talented persons as we grow, our business might not succeed.**

Our performance is substantially dependent on the continued services of senior management and other key personnel, and on our ability to offer competitive salaries and benefits to our employees. We do not have employment agreements with any of our management or other key personnel. Additionally, competition for highly skilled technical, managerial and other personnel is intense. We might not be able to attract, hire, train, retain and motivate the highly skilled managers and employees we need to be successful. If we fail to attract and retain the necessary technical and managerial personnel, our business will suffer and might fail.

**We can issue shares of preferred stock that may adversely affect the rights of shareholders of our common stock.**

Our Articles of Incorporation authorize us to issue up to 5,000,000 shares of preferred stock with designations, rights and preferences determined from time-to-time by our Board of Directors. Accordingly, our Board of Directors is empowered, without shareholder approval, to issue preferred stock with dividend, liquidation, conversion, voting or other rights superior to those of shareholders of our common stock. For example, an issuance of shares of preferred stock could:

- adversely affect the voting power of the shareholders of our common stock;
- make it more difficult for a third party to gain control of us;
- discourage bids for our common stock at a premium; or
- otherwise adversely affect the market price of our common stock.

As of December 31, 2004, we have issued and outstanding 200,000 shares of Series A Nonconvertible Preferred Stock, all of which are held by an entity controlled by members of the family of Sherwin I. Seligsohn, our Chairman of the Board and Chief Executive Officer. Our Board of Directors has authorized and issued other shares of preferred stock in the past — none of which are currently outstanding — and may do so again at any time in the future.

**If the price of our common stock goes down, we may have to issue more shares than are presently anticipated to be issued under our agreement with PPG Industries.**

Under our Development and License Agreement with PPG Industries, we are required to issue to PPG Industries shares of our common stock for services rendered by it. The number of shares of common stock that we are required to deliver to PPG is determined based on a formula requiring that the lower the price of our common stock at and around the time of issuance, the greater the number of shares that we would be required to issue to PPG Industries. Lower than anticipated market prices for our common stock, and correspondingly greater numbers of shares issuable to PPG Industries, with a resulting increase in the number of shares available for public sale, could cause people to sell our common stock, including in short sales, which could drive down the price of our common stock, thus reducing its value and perhaps hindering our ability to raise additional funds in the future. In addition, such an increase in the number of outstanding shares of our common stock would further dilute existing holders of this stock.

**Our executive officers and directors own a large percentage of our common stock and could exert significant influence over matters requiring shareholder approval, including takeover attempts.**

Our executive officers and directors, their respective affiliates and the adult children of Sherwin Seligsohn, our Chairman of the Board and Chief Executive Officer, beneficially own, as of March 8, 2005, approximately 17.1% of the outstanding shares of our common stock. Moreover, Pine Ridge Financial Inc. and First Investors Holding Co., Inc., as successor to Strong River Investments, Inc., assigned to our management their rights to vote the shares of our common stock they received or are entitled to receive upon conversion of warrants, notes and preferred stock issued in an August 2001 private placement transaction, of which warrants to purchase 744,452 shares remain outstanding as of March 8, 2005. Accordingly, these shareholders and members of management may, as a practical matter, be able to exert significant influence over matters requiring approval by our shareholders, including the election of directors and the approval of mergers or other business combinations. This concentration also could have the effect of delaying or preventing a change in control of us.

**Because the vast majority of OLED display manufacturers are located in the Asia-Pacific region, we are subject to international operational, financial, legal and political risks which may negatively impact our operations.**

Many of our licensees and prospective licensees have a majority of their operations in countries other than the United States, particularly in the Asia-Pacific region. Risks associated with our doing business outside of the United States include:

- compliance with a wide variety of foreign laws and regulations;

- legal uncertainties regarding taxes, tariffs, quotas, export controls, export licenses and other trade barriers;
- economic instability in the countries of our licensees, causing delays or reductions in orders for their products and therefore our royalties;
- political instability in the countries in which our licensees operate, particularly in South Korea relating to its disputes with North Korea and in Taiwan relating to its disputes with China;
- difficulties in collecting accounts receivable and longer accounts receivable payment cycles; and
- potentially adverse tax consequences.

Any of these factors could impair our ability to license our OLED technologies and sell our OLED materials, thereby harming our business.

**The market price of our common stock might be highly volatile.**

The market price of our common stock might be highly volatile, as has been the case with our common stock in the past as well as the securities of many companies, particularly other small and emerging-growth companies. We have included a section in this report entitled “Market for Registrant’s Common Equity and Related Stockholder Matters” that contains a table indicating the high and low closing prices of our common stock as reported on the Nasdaq National Market for the periods indicated. Factors such as the following may have a significant impact on the market price of our common stock in the future:

- our expenses and operating results;
- announcements by us or our competitors of technological developments, new product applications or license arrangements; and
- other factors affecting the flat panel display and related industries in general.

**Our operating results may have significant period-to-period fluctuations, which would make it difficult to predict our future performance.**

Due to the current stage of commercialization of our OLED technologies and the significant development and manufacturing objectives that we and our licensees must achieve to be successful, our quarterly operating results will be difficult to predict and may vary significantly from quarter to quarter.

We believe that period-to-period comparisons of our operating results are not a reliable indicator of our future performance at this time. Among other factors affecting our period-to-period results, our license and technology development fees often consist of large one-time or annual payments, resulting in significant fluctuations in our revenues. If, in some future period, our operating results or business outlook fall below the expectations of securities analysts or investors, our stock price would be likely to decline and investors in our common stock may not be able to resell their shares at or above the initial public offering price. Broad market, industry and global economic factors may also materially reduce the market price of our common stock, regardless of our operating performance.

**The issuance of additional shares of our common stock could drive down the price of our stock.**

The price of our common stock can be expected to decrease if:

- other shares of our common stock that are currently subject to restriction on sale become freely salable, whether through an effective registration statement or based on Rule 144 under the Securities Act of 1933, as amended; or
- we issue additional shares of our common stock that might be or become freely salable, including shares that would be issued upon conversion of our preferred stock or the exercise of outstanding warrants and options.

**Because we do not intend to pay dividends, shareholders will benefit from an investment in our common stock only if it appreciates in value.**

We have never declared or paid any cash dividends on our common stock. We currently intend to retain our future earnings, if any, to finance further research and development and do not expect to pay any cash dividends in the foreseeable future. As a result, the success of an investment in our common stock will depend upon any future appreciation in its value. There is no guarantee that our common stock will appreciate in value or even maintain the price at which shareholders have purchased their shares.

#### **ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

We do not utilize financial instruments for trading purposes and hold no derivative financial instruments, other financial instruments or derivative commodity instruments that could expose us to significant market risk. Our primary market risk exposure with regard to financial instruments is to changes in interest rates, which would impact interest income earned on investments.

#### **ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

Our consolidated financial statements and the relevant notes to those statements are attached to this report beginning on page F-1.

#### **ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

None.

#### **ITEM 9A. CONTROLS AND PROCEDURES**

##### (a) Evaluation of disclosure controls and procedures.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures, as of the end of the period covered by this report, are functioning effectively to provide reasonable assurance that the information required to be disclosed by us in reports filed or submitted under the Securities Exchange Act of 1934, as amended, is (i) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (ii) accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding disclosure.

##### (b) Management's report on internal control over financial reporting and attestation report of public accounting firm.

The report of management on our internal control over financial reporting and the associated attestation report of our independent registered public accounting firm are set forth in Item 8 of this report and are incorporated herein by reference.

##### (c) Changes in internal control over financial reporting.

During our most recent fiscal quarter, there was no change in our internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

#### **ITEM 9B. OTHER INFORMATION**

None.

### **PART III**

#### **ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT**

Information with respect to this item is set forth in our definitive Proxy Statement (the Proxy Statement) to be filed with the SEC for our Annual Meeting of Shareholders to be held on June 30, 2005, under the headings "Nominees for Election as Directors," "Compliance with Section 16(a) of the Exchange Act" and "Code of Ethics," and is incorporated herein by reference. Information regarding our executive officers is included at the end of Part I of this report.

#### **ITEM 11. EXECUTIVE COMPENSATION**

Information with respect to this item is set forth in our Proxy Statement under the heading "Executive Management Compensation," and is incorporated herein by reference.

#### **ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

Information with respect to the ownership of our securities by certain persons is set forth in our Proxy Statement under the headings "Principal Shareholders" and "Equity Compensation Plans," and is incorporated herein by reference.

#### **ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS**

Information with respect to transactions with our managers and other related parties is set forth in our Proxy Statement under the heading "Certain Transactions," and is incorporated herein by reference.

#### **ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

Information with respect to principal accounting fees and services is set forth in our Proxy Statement under the heading "Information Regarding Independent Registered Public Accounting Firm," and is incorporated herein by reference.



## PART IV

### ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

(1) Financial Statements:

Management's Report on Internal Control Over Financial Reporting . . . . .	F-2
Reports of Independent Registered Public Accounting Firm . . . . .	F-3
Consolidated Balance Sheets . . . . .	F-5
Consolidated Statements of Operations. . . . .	F-6
Consolidated Statements of Shareholders' Equity . . . . .	F-7
Consolidated Statements of Cash Flows . . . . .	F-10
Notes to Consolidated Financial Statements . . . . .	F-11

(2) Financial Statement Schedules:

None.

(3) Exhibits:

The following is a list of the exhibits filed as part of this report. Where so indicated by footnote, exhibits that were previously filed are incorporated by reference. For exhibits incorporated by reference, the location of the exhibit in the previous filing is indicated parenthetically, together with a reference to the filing indicated by footnote.

Exhibit Number	<u>Description</u>
3.1	Amended and Restated Articles of Incorporation of the registrant (1)
3.2	Bylaws of the registrant (1)
10.1#	Warrant Agreement dated as of April 25, 1996 between the registrant and Sherwin Seligsohn (2)
10.2#	Warrant Agreement dated as of April 25, 1996 between the registrant and Steven V. Abramson (2)
10.3#	Warrant Agreement dated as of April 25, 1996 between the registrant and Sidney D. Rosenblatt (2)
10.4#	Warrant Agreement dated as of April 25, 1996 between the registrant and Dean L. Ledger (2)
10.5#	Warrant Agreement dated as of April 25, 1996 between the registrant and Scott Seligsohn (3)
10.6#*	Warrant Agreement dated as of April 2, 1998 between the registrant and Steven V. Abramson
10.7#*	Warrant Agreement dated as of April 2, 1998 between the registrant and Sidney D. Rosenblatt
10.8#	Warrant Agreement dated as of April 18, 2000 between the registrant and Julia J. Brown (4)
10.9#	Amendment No. 1 to Warrant Agreement between the registrant and Julia J. Brown, dated as of April 18, 2000 (1)
10.10#	Change in Control Agreement dated as of April 28, 2003, between the registrant and Sherwin I. Seligsohn (5)
10.11#	Change in Control Agreement dated as of April 28, 2003, between the registrant and Steven V. Abramson (5)
10.12#	Change in Control Agreement dated as of April 28, 2003, between the registrant and Sidney D. Rosenblatt (5)
10.13#	Change in Control Agreement dated as of April 28, 2003, between the registrant and Julia J. Brown (5)
10.14#*	Executive Performance Compensation Program, dated as of April 20, 2004
10.15	Stock Option Plan dated as of September 1, 1995 (6)
10.16	Amended and Restated Stock Option Plan (renamed the Equity Compensation Plan), dated as of June 14, 2004 (7)
10.17	1997 Research Agreement between the registrant and The Trustees of Princeton University (8)

<u>Exhibit Number</u>	<u>Description</u>
10.18	Amendment #1 to the 1997 Research Agreement between the registrant and the Trustees of Princeton University, dated as of November 14, 2000 (9)
10.19	Amendment #2 to the 1997 Research Agreement between the registrant and the Trustees of Princeton University, dated as of April 11, 2002 (9)
10.20	1997 Amended License Agreement among the registrant, The Trustees of Princeton University and the University of Southern California (8)
10.21	Amendment #1 to the Amended License Agreement among the registrant, the Trustees of Princeton University and the University of Southern California, dated as of August 7, 2003 (9)
10.22	Termination, Amendment and License Agreement by and among the registrant, PD-LD, Inc., Dr. Vladimir S. Ban, and The Trustees of Princeton University dated as of July 19, 2000 (10)
10.23	Development and License Agreement dated as of October 1, 2000, between the registrant and PPG Industries, Inc. (11)
10.24	Form of Warrant Agreement issuable by the registrant to PPG Industries, Inc. pursuant to the Development and License Agreement (11)
10.25	Amendment Number 1 to the Development and License Agreement between the registrant and PPG Industries, Inc., dated as of March 7, 2001 (11)
10.26	Amendment Number 2 to the Development and License Agreement between the registrant and PPG Industries, Inc., dated as of October 15, 2002 (12)
10.27	Amendment Number 3 to the Development and License Agreement between the registrant and PPG Industries, Inc., dated as of January 21, 2003 (12)
10.28	Amendment Number 4 to the Development and License Agreement between the registrant and PPG Industries, Inc., dated as of April 11, 2003 (13)
10.29	Amendment Number 5 to the Development and License Agreement between the registrant and PPG Industries, Inc., dated as of December 28, 2004 (14)
10.30	License Agreement between the registrant and Motorola, Inc., dated as of September 29, 2000 (10)
10.31*	Promissory Note issued to Wachovia Bank, National Association, dated as of December 1, 2004
10.32	Terms and Conditions of Sale for Equipment Purchase (15)
21*	Subsidiaries of the Registrant
23.1*	Consent of KPMG LLP
31.1*	Certifications of Sherwin I. Seligsohn, Chief Executive Officer, as required by Rule 13a-14(a) or Rule 15d-14(a)
31.2*	Certifications of Sidney D. Rosenblatt, Chief Financial Officer, as required by Rule 13a-14(a) or Rule 15d-14(a)
32.1**	Certifications of Sherwin I. Seligsohn, Chief Executive Officer, as required by Rule 13a-14(b) or Rule 15d-14(b), and by 18 U.S.C. Section 1350. (This exhibit shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section. Further, this exhibit shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.)
32.2**	Certifications of Sidney D. Rosenblatt, Chief Financial Officer, as required by Rule 13a-14(b) or Rule 15d-14(b), and by 18 U.S.C. Section 1350. (This exhibit shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section. Further, this exhibit shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.)

Explanation of Footnotes to Listing of Exhibits:

\* Filed herewith.

\*\* Furnished herewith.

# Management contract or compensatory plan or arrangement.

- (1) Filed as an Exhibit to the Annual Report on Form 10-K for the year ended December 31, 2003, filed with the SEC on March 1, 2004.
- (2) Filed as an Exhibit to the Annual Report on Form 10K-SB for the year ended December 31, 1996, filed with the SEC on March 31, 1997.
- (3) Filed as an Exhibit to Registration Statement (No. 333-120737) on Form S-3, filed with the SEC on November 24, 2004.
- (4) Filed as an Exhibit to the Annual Report on Form 10-K for the year ended December 31, 2000, filed with the SEC on March 29, 2001.
- (5) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2003, filed with the SEC on May 13, 2003.
- (6) Filed as an Exhibit to Registration Statement (No. 333-92649) on Form S-8, filed with the SEC on December 13, 1999.
- (7) Filed as an Exhibit to the Definitive Proxy Statement for the 2004 Annual Meeting of Shareholders, filed with the SEC on April 26, 2004.
- (8) Filed as an Exhibit to the Annual Report on Form 10K-SB for the year ended December 31, 1997, filed with the SEC on March 31, 1998.
- (9) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2003, filed with the SEC on November 10, 2003.
- (10) Filed as an Exhibit to the amended Quarterly Report on Form 10-Q for the quarter ended September 30, 2000, filed with the SEC on November 20, 2001.
- (11) Filed as an Exhibit to Amendment No. 1 to Registration Statement (No. 333-50990) on Form S-3, filed with the SEC on March 7, 2001.
- (12) Filed as an Exhibit to the Annual Report on Form 10-K for the year ended December 31, 2002, filed with the SEC on March 31, 2003.
- (13) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended June 30, 2003, filed with the SEC on August 13, 2003.
- (14) Filed as an Exhibit to Amendment No. 1 to Registration Statement (No. 333-120737) on Form S-3, filed with the SEC on January 25, 2005.
- (15) Filed as an Exhibit to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2004, filed with the SEC on November 5, 2004.

Note: Any of the exhibits listed in the foregoing index not included with this report may be obtained, without charge, by writing to Mr. Sidney D. Rosenblatt, Corporate Secretary, Universal Display Corporation, 375 Phillips Boulevard, Ewing, New Jersey 08618.

(b) The exhibits required to be filed by us with this report are listed above.

(c) The consolidated financial statement schedules required to be filed by us with this report are listed above.

## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized:

### UNIVERSAL DISPLAY CORPORATION

By: /s/ Sidney D. Rosenblatt  
Sidney D. Rosenblatt  
Executive Vice President, Chief Financial Officer,  
Treasurer and Secretary

Date: March 14, 2005

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Sherwin I. Seligsohn</u> Sherwin I. Seligsohn	Chairman of Board and Chief Executive Officer	March 14, 2005
<u>/s/ Steven V. Abramson</u> Steven V. Abramson	President, Chief Operating Officer and Director	March 14, 2005
<u>/s/ Sidney D. Rosenblatt</u> Sidney D. Rosenblatt	Executive Vice President, Chief Financial Officer, Treasurer, Secretary and Director	March 14, 2005
<u>/s/ Leonard Becker</u> Leonard Becker	Director	March 14, 2005
<u>/s/ Elizabeth H. Gemmill</u> Elizabeth H. Gemmill	Director	March 14, 2005
<u>/s/ C. Keith Hartley</u> C. Keith Hartley	Director	March 14, 2005
<u>/s/ Lawrence Lacerte</u> Lawrence Lacerte	Director	March 14, 2005

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

Consolidated Financial Statements:

Management's Report on Internal Control Over Financial Reporting .....	F-2
Report of Independent Registered Public Accounting Firm .....	F-3
Reports of Independent Registered Public Accounting Firm .....	F-4
Consolidated Balance Sheets .....	F-5
Consolidated Statements of Operations .....	F-6
Consolidated Statements of Shareholders' Equity .....	F-7
Consolidated Statements of Cash Flows .....	F-10
Notes to Consolidated Financial Statements .....	F-11

## MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our system of internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Management performed an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2004 based upon criteria in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, management determined that the company's internal control over financial reporting was effective as of December 31, 2004, based on the criteria in Internal Control-Integrated Framework issued by COSO.

Management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2004, has been audited by KPMG LLP, an independent registered public accounting firm, as stated in its report which appears on the following page.

Sherwin I. Seligsohn  
Chairman of the Board and  
Chief Executive Officer

Sidney D. Rosenblatt  
Executive Vice President and  
Chief Financial Officer

Dated: March 3, 2005

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders  
Universal Display Corporation:

We have audited management's assessment, included in the accompanying Management's Report on Internal Control Over Financial Reporting, that Universal Display Corporation (the Company) maintained effective internal control over financial reporting as of December 31, 2004, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express an opinion on management's assessment and an opinion on the effectiveness of the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, management's assessment that Universal Display Corporation maintained effective internal control over financial reporting as of December 31, 2004, is fairly stated, in all material respects, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Also, in our opinion, Universal Display Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2004, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Universal Display Corporation and subsidiary as of December 31, 2004 and 2003, and the related consolidated statements of operations, shareholders' equity and cash flows for each of the years in the three-year period ended December 31, 2004, and our report dated March 11, 2005 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Philadelphia, Pennsylvania  
March 11, 2005

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders  
Universal Display Corporation:

We have audited the accompanying consolidated balance sheets of Universal Display Corporation and subsidiary (the Company) as of December 31, 2004 and 2003, and the related consolidated statements of operations, shareholders' equity and cash flows for each of the years in the three-year period ended December 31, 2004. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Universal Display Corporation and subsidiary as of December 31, 2004 and 2003, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2004, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of Universal Display Corporation's internal control over financial reporting as of December 31, 2004, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 11, 2005 expressed an unqualified opinion on management's assessment of, and the effective operation of, internal control over financial reporting.

/s/ KPMG LLP

Philadelphia, Pennsylvania  
March 11, 2005



**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**CONSOLIDATED BALANCE SHEETS**

	December 31, 2004	December 31, 2003
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents .....	\$ 18,930,581	\$ 14,070,207
Short-term investments .....	26,258,463	12,811,704
Accounts receivable .....	2,588,279	805,602
Inventory .....	19,941	33,044
Other current assets .....	237,927	153,924
Total current assets .....	48,035,191	27,874,481
PROPERTY AND EQUIPMENT, net. ....	9,551,532	3,532,115
ACQUIRED TECHNOLOGY, net .....	9,709,631	11,404,703
INVESTMENTS .....	2,290,451	3,255,574
RESTRICTED CASH .....	4,200,000	—
OTHER ASSETS .....	105,358	134,773
	<u>\$ 73,892,163</u>	<u>\$ 46,201,646</u>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
<b>CURRENT LIABILITIES:</b>		
Capital lease obligations .....	\$ —	\$ 3,886
Current portion of long-term debt .....	300,000	—
Accounts payable .....	723,512	436,809
Accrued expenses .....	3,697,432	2,020,210
Deferred license fees .....	1,766,667	1,266,667
Deferred revenue .....	916,667	467,204
Total current liabilities .....	7,404,278	4,194,776
DEFERRED LICENSE FEES .....	3,100,000	3,100,000
LONG-TERM DEBT, less current portion .....	4,200,000	—
	14,704,278	7,294,776
<b>COMMITMENTS (Note 12)</b>		
<b>SHAREHOLDERS' EQUITY:</b>		
Preferred Stock, par value \$0.01 per share, 5,000,000 shares authorized, 200,000 shares of Series A Nonconvertible Preferred Stock issued and outstanding (liquidation value of \$7.50 per share or \$1,500,000), 300,000 shares of Series B Convertible Preferred Stock authorized and none outstanding, 5,000 shares of Series C-1 Convertible Preferred Stock authorized and none outstanding, 5,000 shares of Series D Convertible Preferred Stock authorized and none outstanding. ....	2,000	5,000
Common Stock, par value \$0.01 per share, 50,000,000 shares authorized, 27,903,385 and 24,196,765 shares issued and outstanding .....	279,034	241,968
Additional paid-in-capital .....	173,372,344	137,160,751
Deferred compensation .....	(17,446)	—
Accumulated other comprehensive loss .....	(79,837)	(38,837)
Accumulated deficit .....	(114,368,210)	(98,462,012)
Total shareholders' equity .....	59,187,885	38,906,870
	<u>\$ 73,892,163</u>	<u>\$ 46,201,646</u>

The accompanying notes are an integral part of these consolidated financial statements.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

	Year Ended December 31,		
	2004	2003	2002
REVENUE:			
Contract research revenue . . . . .	\$ 2,621,636	\$ 1,420,984	\$ 1,468,958
Development chemical revenue . . . . .	2,484,070	2,295,009	833,194
Commercial chemical revenue . . . . .	147,600	68,160	—
Royalty and license revenue . . . . .	403,070	159,040	—
Technology development revenue . . . . .	1,350,537	2,650,000	182,796
Total revenue . . . . .	<u>7,006,913</u>	<u>6,593,193</u>	<u>2,484,948</u>
OPERATING EXPENSES:			
Cost of chemicals sold . . . . .	155,283	110,503	39,676
Research and development . . . . .	16,651,335	17,897,522	15,804,267
General and administrative . . . . .	7,052,047	5,766,761	4,754,850
Royalty expense . . . . .	350,000	350,000	250,000
Total operating expenses . . . . .	<u>24,208,665</u>	<u>24,124,786</u>	<u>20,848,793</u>
Operating loss . . . . .	<u>(17,201,752)</u>	<u>(17,531,593)</u>	<u>(18,363,845)</u>
INTEREST INCOME . . . . .	795,620	162,356	429,356
INTEREST EXPENSE . . . . .	(14,120)	—	(3,298,589)
DEBT CONVERSION AND EXTINGUISHMENT EXPENSE . . . . .	—	—	(10,011,780)
OTHER REVENUE . . . . .	30,712	16,032	—
INCOME TAX BENEFIT . . . . .	612,966	—	225,657
NET LOSS . . . . .	<u>(15,776,574)</u>	<u>(17,353,205)</u>	<u>(31,019,201)</u>
DEEMED DIVIDENDS (Notes 8 and 10) . . . . .	<u>(129,624)</u>	<u>(1,034,302)</u>	<u>(1,953,479)</u>
NET LOSS ATTRIBUTABLE TO COMMON SHAREHOLDERS . . . . .	<u><u>\$(15,906,198)</u></u>	<u><u>\$(18,387,507)</u></u>	<u><u>\$(32,972,680)</u></u>
BASIC AND DILUTED NET LOSS PER COMMON SHARE . . . . .	<u><u>\$ (0.59)</u></u>	<u><u>\$ (0.82)</u></u>	<u><u>\$ (1.71)</u></u>
WEIGHTED AVERAGE SHARES USED IN COMPUTING BASIC AND DILUTED NET LOSS PER COMMON SHARE . . . . .	<u><u>26,791,158</u></u>	<u><u>22,428,219</u></u>	<u><u>19,227,697</u></u>

The accompanying notes are an integral part of these consolidated financial statements.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY**

	Series A Nonconvertible Preferred Stock		Series B Convertible Preferred Stock	
	Shares	Amount	Shares	Amount
BALANCE, DECEMBER 31, 2001	200,000	\$2,000	300,000	\$ 3,000
Exercise of common stock options and warrants	—	—	—	—
Issuance of common stock through direct offerings, net of expenses of \$519,288	—	—	—	—
Reduction of conversion price of convertible notes	—	—	—	—
Deemed dividends	—	—	—	—
Issuance of common stock in connection with the executive employee bonus	—	—	—	—
Issuance of common stock options to non-employees	—	—	—	—
Issuance of common stock, options and warrants in connection with the Development Agreements	—	—	—	—
Issuance of common stock upon conversion of Convertible Notes	—	—	—	—
Issuance of common stock in connection with License Agreement	—	—	—	—
Unrealized loss on available-for-sale securities	—	—	—	—
Net loss	—	—	—	—
Comprehensive loss	—	—	—	—
BALANCE, DECEMBER 31, 2002	200,000	2,000	300,000	3,000
Exercise of common stock options and warrants	—	—	—	—
Issuance of common stock through direct offerings, net of expenses of \$1,270,643	—	—	—	—
Deemed dividends	—	—	—	—
Issuance of common stock to employees	—	—	—	—
Issuance of common stock and options to non-employees	—	—	—	—
Issuance of common stock, options and warrants in connection with the Development Agreements	—	—	—	—
Unrealized loss on available-for-sale securities	—	—	—	—
Net loss	—	—	—	—
Comprehensive loss	—	—	—	—
BALANCE, DECEMBER 31, 2003	200,000	2,000	300,000	3,000
Exercise of common stock options and warrants	—	—	—	—
Issuance of common stock through direct offerings, net of expenses of \$2,077,750	—	—	—	—
Deemed dividends	—	—	—	—
Issuance of common stock to employees	—	—	—	—
Issuance of common stock and options to non-employees	—	—	—	—
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	—	—
Issuance of common stock, options and warrants in connection with the Development Agreements	—	—	—	—
Issuance of common stock upon conversion of Series B Preferred Stock	—	—	(300,000)	(3,000)
Amortization of Deferred Compensation	—	—	—	—
Unrealized loss on available-for-sale securities	—	—	—	—
Net loss	—	—	—	—
Comprehensive loss	—	—	—	—
BALANCE, DECEMBER 31, 2004	<u>200,000</u>	<u>\$2,000</u>	<u>—</u>	<u>\$ —</u>

The accompanying notes are an integral part of these consolidated financial statements.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY — (Continued)**

	Common Stock		Additional Paid-in Capital
	Shares	Amount	
BALANCE, DECEMBER 31, 2001	18,093,124	\$180,931	\$ 85,016,601
Exercise of common stock options and warrants	22,533	225	104,007
Issuance of common stock through direct offerings, net of expenses of \$519,288	1,660,466	16,605	8,038,581
Reduction of conversion price of convertible notes	—	—	7,441,547
Deemed dividends	—	—	1,953,479
Issuance of common stock in connection with the executive employee bonus	2,000	20	16,130
Issuance of common stock options to non-employees	—	—	461,899
Issuance of common stock, options and warrants in connection with the Development Agreements	364,043	3,641	5,380,019
Issuance of common stock upon conversion of Convertible Notes	1,375,246	13,752	5,057,409
Issuance of common stock in connection with License Agreement	8,000	80	71,736
Unrealized loss on available-for-sale securities	—	—	—
Net loss	—	—	—
Comprehensive loss	—	—	—
BALANCE, DECEMBER 31, 2002	21,525,412	215,254	113,541,408
Exercise of common stock options and warrants	317,302	3,173	1,197,879
Issuance of common stock through direct offerings, net of expenses of \$1,270,643	2,012,500	20,125	14,809,232
Deemed dividends	—	—	1,034,302
Issuance of common stock to employees	19,141	191	261,330
Issuance of common stock and options to non-employees	50	1	83,912
Issuance of common stock, options and warrants in connection with the Development Agreements	322,360	3,224	6,232,688
Unrealized loss on available-for-sale securities	—	—	—
Net loss	—	—	—
Comprehensive loss	—	—	—
BALANCE, DECEMBER 31, 2003	24,196,765	241,968	137,160,751
Exercise of common stock options and warrants	467,599	4,676	2,918,964
Issuance of common stock through direct offerings, net of expenses of \$2,077,750	2,550,000	25,500	28,496,749
Deemed dividends	—	—	46,176
Issuance of common stock to employees	64,750	647	870,332
Issuance of common stock and options to non-employees	—	—	(5,485)
Issuance of common stock to Board of Directors and Scientific Advisory Board	38,000	380	643,340
Issuance of common stock, options and warrants in connection with the Development Agreements	167,355	1,674	3,242,706
Issuance of common stock upon conversion of Series B Preferred Stock	418,916	4,189	(1,189)
Amortization of Deferred Compensation	—	—	—
Unrealized loss on available-for-sale securities	—	—	—
Net loss	—	—	—
Comprehensive loss	—	—	—
BALANCE, DECEMBER 31, 2004	27,903,385	\$279,034	\$173,372,344

The accompanying notes are an integral part of these consolidated financial statements.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY — (Continued)**

	Accumulated Deficit	Deferred Compensation and Accumulated Other Comprehensive Loss	Total Equity
BALANCE, DECEMBER 31, 2001	\$ (47,101,825)	\$ (3,925)	\$ 38,096,782
Exercise of common stock options and warrants	—	—	104,232
Issuance of common stock through direct offerings, net of expenses of \$519,288	—	—	8,055,186
Reduction of conversion price of convertible notes	—	—	7,441,547
Deemed dividends	(1,953,479)	—	—
Issuance of common stock in connection with the executive employee bonus	—	—	16,150
Issuance of common stock options to non-employees	—	—	461,899
Issuance of common stock, options and warrants in connection with the Development Agreements	—	—	5,383,660
Issuance of common stock upon conversion of Convertible Notes	—	—	5,071,161
Issuance of common stock in connection with License Agreement	—	—	71,816
Unrealized loss on available-for-sale securities	—	(14,661)	(14,661)
Net loss	(31,019,201)	—	(31,019,201)
Comprehensive loss	—	—	(31,033,862)
BALANCE, DECEMBER 31, 2002	(80,074,505)	(18,586)	33,668,571
Exercise of common stock options and warrants	—	—	1,201,052
Issuance of common stock through direct offerings, net of expenses of \$1,270,643	—	—	14,829,357
Deemed dividends	(1,034,302)	—	—
Issuance of common stock to employees	—	—	261,521
Issuance of common stock and options to non-employees	—	—	83,913
Issuance of common stock, options and warrants in connection with the Development Agreements	—	—	6,235,912
Unrealized loss on available-for-sale securities	—	(20,251)	(20,251)
Net loss	(17,353,205)	—	(17,353,205)
Comprehensive loss	—	—	(17,373,456)
BALANCE, DECEMBER 31, 2003	\$ (98,462,012)	\$ (38,837)	\$ 38,906,870
Exercise of common stock options and warrants	—	—	2,923,640
Issuance of common stock through direct offerings, net of expenses of \$2,077,750	—	—	28,522,249
Deemed dividends	(129,624)	—	(83,448)
Issuance of common stock to employees	—	(353,513)	517,466
Issuance of common stock and options to non-employees	—	—	(5,485)
Issuance of common stock to Board of Directors and Scientific Advisory Board	—	—	643,720
Issuance of common stock, options and warrants in connection with the Development Agreements	—	—	3,244,380
Issuance of common stock upon conversion of Series B Preferred Stock	—	—	—
Amortization of Deferred Compensation	—	336,067	336,067
Unrealized loss on available-for-sale securities	—	(41,000)	(41,000)
Net loss	(15,776,574)	—	(15,776,574)
Comprehensive loss	—	—	(15,817,574)
BALANCE, DECEMBER 31, 2004	\$ (114,368,210)	\$ (97,283)	\$ 59,187,885

The accompanying notes are an integral part of these consolidated financial statements.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	Year Ended December 31,		
	2004	2003	2002
<b>CASH FLOWS USED IN OPERATING ACTIVITIES:</b>			
Net loss	\$(15,776,574)	\$(17,353,205)	\$(31,019,201)
Non-cash charges to statement of operations:			
Depreciation	1,398,636	2,042,783	1,848,552
Amortization of intangibles	1,695,072	1,695,072	1,695,072
Amortization of discounts on Convertible Promissory Notes	—	—	13,044,467
Amortization of premium and discount on investments	(24,143)	61,090	—
Issuance of common stock to employees	1,738,549	267,593	—
Issuance of common stock options and warrants for services	(5,484)	77,842	542,568
Issuance of common stock in connection with executive Compensation	—	—	16,150
Issuance of common stock, options and warrants in connection with Development Agreement	3,356,146	6,104,581	5,487,515
Issuance of common stock to Board of Directors and Scientific Advisory Board	643,720	—	—
Issuance of common stock in connection with License Agreement	—	—	71,816
(Increase) decrease in assets:			
Accounts receivable	(1,782,677)	(142,780)	(121,967)
Inventory	13,103	(33,044)	—
Other current assets	(84,003)	23,295	97,932
Other assets	29,415	(1,010)	(113,638)
Increase (decrease) in liabilities:			
Accounts payable and accrued expenses	883,694	1,115,174	(352,402)
Deferred license fees	500,000	200,000	3,766,667
Deferred revenue	449,463	145,000	272,204
Net cash used in operating activities	<u>(6,965,083)</u>	<u>(5,797,609)</u>	<u>(4,764,265)</u>
<b>CASH FLOWS (USED IN) PROVIDED BY INVESTING ACTIVITIES:</b>			
Purchases of property and equipment	(7,418,053)	(957,328)	(1,169,945)
Purchase of intangibles	—	—	—
Purchases of investments	(48,653,858)	(19,219,160)	(6,900,698)
Proceeds from sale of investments	36,155,365	8,113,192	6,359,585
Restricted cash	—	—	15,162,414
Net cash (used in) provided by investing activities	<u>(19,916,546)</u>	<u>(12,063,296)</u>	<u>13,451,356</u>
<b>CASH FLOWS PROVIDED BY (USED IN) FINANCING ACTIVITIES:</b>			
Net proceeds from issuance of common stock	28,522,249	14,829,357	8,055,186
Payments for Convertible Promissory Notes	—	—	(8,819,997)
Proceeds from Loan	4,500,000	—	—
Restricted Cash	(4,200,000)	—	—
Proceeds from the exercise of common stock options and warrants	2,923,640	1,201,052	104,232
Principal payments on capital lease	(3,886)	(4,713)	(4,228)
Net cash provided by (used in) financing activities	<u>31,742,003</u>	<u>16,025,696</u>	<u>(664,807)</u>
<b>INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<u>4,860,374</u>	<u>(1,835,209)</u>	<u>8,022,284</u>
<b>CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD</b>	<u>14,070,207</u>	<u>15,905,416</u>	<u>7,883,132</u>
<b>CASH AND CASH EQUIVALENTS, END OF PERIOD</b>	<u>\$ 18,930,581</u>	<u>\$ 14,070,207</u>	<u>\$ 15,905,416</u>
Cash paid for interest	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 281,106</u>

The accompanying notes are an integral part of these consolidated financial statements.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**1. BUSINESS:**

Universal Display Corporation (the "Company") is engaged in the research, development and commercialization of organic light emitting diode ("OLED"), technologies for use in a variety of flat panel display and other applications.

The Company conducts a substantial portion of its OLED technology development activities at its technology development and transfer facility in Ewing, New Jersey. The Company moved its operations to this facility in the fourth quarter of 1999 and expanded the facility from 11,000 square feet to 21,000 square feet in 2001. On December 1, 2004, the Company acquired the entire building at which the facility is located. The Company currently occupies approximately one-half of the 41,000 square feet of space in the building, and is in the process of expanding its operations into an additional 12,000 square feet in the building.

The Company also leases approximately 1,600 square feet of laboratory space in South Brunswick, New Jersey, and 850 square feet of office space in Coeur d'Alene, Idaho.

The Company also sponsors substantial OLED technology research being conducted at Princeton University and at the University of Southern California ("USC") (on a subcontract basis with Princeton University), pursuant to a Research Agreement between the Company and the Trustees of Princeton University dated October 9, 1997 (as amended, the "1997 Research Agreement") (Note 3).

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:**

**Principles of Consolidation**

The consolidated financial statements include the accounts of Universal Display Corporation and its wholly owned subsidiary, UDC, Inc. All intercompany transactions and accounts have been eliminated.

**Management's Use of Estimates**

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

**Cash, Cash Equivalents and Short-term Investments**

The Company considers all highly liquid debt instruments purchased with an original maturity of three months or less to be cash equivalents. The Company classifies its existing marketable securities as available-for-sale in accordance with the provisions of Statement of Financial Accounting Standards No. 115, "Accounting for Certain Investments in Debt and Equity Securities."

These securities are carried at fair market value, with unrealized gains and losses reported in shareholders' equity as a component of other comprehensive loss. Gains or losses on securities sold are based on the specific identification method. The Company reported accumulated unrealized holding losses of \$79,837 and \$38,837 at December 31, 2004 and 2003, respectively.

**Restricted Cash**

At December 31, 2004, the Company had \$4,500,000 of restricted cash, of which \$4,200,000 was classified as a noncurrent asset. The restricted cash serves as collateral for a note payable in connection with the purchase of building and property at which our main facility is located. The cash is held by the issuing bank, is restricted, as to withdrawal or use, up to the outstanding balance of the note, and is currently invested in corporate bonds. Income from these investments is paid to the Company. The current portion of restricted cash of \$300,000 is classified as cash and cash equivalents and represents the amount of the current liability due under the note.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: — (Continued)**

**Fair Value of Financial Instruments**

Cash and cash equivalents, accounts receivable, prepaid and other current assets, accounts payable and accrued expenses are reflected in the accompanying financial statements at fair value due to the short-term nature of those instruments. Short-term and long-term investments and restricted cash are recorded at fair market value. The carrying amount of the long-term debt approximates fair value as the debt interest is a floating rate.

**Property and Equipment**

Property and equipment are stated at cost and depreciated on a straight-line basis over their estimated useful life of thirty years for building, three to seven years for office and lab equipment, furniture and fixtures, fifteen years for building improvements, and the lesser of the lease term or useful life for capital leases. Repair and maintenance costs are charged to expense as incurred. Additions and betterments are capitalized.

Property and equipment consist of the following:

	December 31,	
	2004	2003
Land .....	\$ 820,000	\$ —
Building and improvements .....	6,795,900	2,058,670
Office and lab equipment .....	6,821,988	6,670,220
Furniture and fixtures .....	225,335	222,106
Construction-in-progress .....	1,844,536	206,628
	<u>16,507,759</u>	<u>9,157,624</u>
Less: Accumulated depreciation .....	<u>(6,956,227)</u>	<u>(5,625,509)</u>
Property and Equipment, net. ....	<u>\$ 9,551,532</u>	<u>\$ 3,532,115</u>

Depreciation expense was \$1,398,636, \$2,042,783 and \$1,848,552 for the years ended December 31, 2004, 2003 and 2002, respectively.

Construction-in-progress consists of costs incurred for the expansion of the Company's current space and for the acquisition of lab equipment for the Company's facility. Upon completion of construction or commencement of operation of the lab equipment, the cost associated with such assets will be depreciated over their estimated useful lives.

**Inventory**

Inventory consists of chemicals held at the Company's location. Inventory is valued at the lower of cost or market, with the cost determined using the specific identification method.

**Acquired Technology**

Acquired technology consists of acquired license rights for patents and know-how obtained from PD-LD, Inc. and Motorola, Inc. (Note 4). These intangible assets consist of the following:

	December 31,	
	2004	2003
PD-LD, Inc. ....	\$ 1,481,250	\$ 1,481,250
Motorola, Inc. ....	15,469,468	15,469,468
	<u>16,950,718</u>	<u>16,950,718</u>
Less: Accumulated amortization. ....	<u>(7,241,087)</u>	<u>(5,546,015)</u>
Acquired Technology, net .....	<u>\$ 9,709,631</u>	<u>\$ 11,404,703</u>



**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: — (Continued)**

Acquired technology is amortized on a straight-line basis over its estimated useful life of ten years. Amortization expense was \$1,695,072 for each of the years ended December 31, 2004, 2003 and 2002. For each of the five succeeding fiscal years, amortization expense will be \$1,695,072.

**Impairment of Long-Lived Assets**

In accordance with SFAS 144, "Accounting for Impairment or Disposal of Long-Lived Assets," management continually evaluates whether events or changes in circumstances might indicate that the remaining estimated useful life of long-lived assets may warrant revision, or that the remaining balance may not be recoverable. When factors indicate that long-lived assets should be evaluated for possible impairment, the Company uses an estimate of the related undiscounted cash flows in measuring whether the long-lived asset should be written down to fair value. Measurement of the amount of impairment would be based on generally accepted valuation methodologies, as deemed appropriate. As of December 31, 2004, management of the Company believed that no revision to the remaining useful lives or write-down of the Company's long-lived assets was required, and no such revisions were required in 2003 and 2002.

**Net Loss Per Common Share**

Basic net loss per common share is computed by dividing the net loss attributable to common stock shareholders by the weighted-average number of shares of common stock outstanding for the period. Diluted net loss per common share reflects the potential dilution from the exercise, or conversion of securities into common stock. For the years ended December 31, 2004, 2003 and 2002, the effects of the exercise of outstanding stock options and warrants of 3,269,043 and 5,153,154, respectively, were excluded from the calculation of diluted EPS as the impact would be antidilutive.

**Revenue Recognition and Deferred License Fees**

Contract revenues represent reimbursements by government entities for all or a portion of the research and development costs the Company incurs in relation to its government contracts. Revenues are recognized proportionally as research and development costs are incurred, or as defined milestones are achieved.

Development chemical revenues represent revenues from sales of OLED materials to display manufacturers for evaluation and product development purposes. Revenues are recognized at the time of shipment and passage of title. The customer does not have the right to return the materials.

Commercial chemical revenues represent sales of OLED materials to display manufacturers for the production of commercial products. These revenues are recognized at the time of shipment, or at time of delivery and passage of title, depending upon the contractual agreement between the parties.

The Company receives non-refundable advanced payments in connection with certain technology development and evaluation agreements and license agreements it enters into. Certain of these payments are creditable against future amounts payable under commercial license agreements that the parties may subsequently enter into and are deferred until such license agreements are executed or negotiations have ceased and there is no likelihood of executing a license agreement. Revenues would then be recorded over the expected life of the licensed technology, if there is an effective license agreement, or at the time the negotiations show no likelihood of an executable license agreement. Advanced payments received under technology development and evaluation agreements that are not creditable against license fees are deferred and revenue is recognized over the term of the agreement as technology development revenue.

Royalty revenue is received from OVPD equipment sold under a development and license agreement with Aixtron AG. This revenue is recognized upon notification of equipment sold and royalties due from Aixtron AG.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: — (Continued)**

**Research and Development**

Expenditures for research and development are charged to operations as incurred. Research and development expenses consist of the following:

	Year Ended December 31,		
	2004	2003	2002
Development and operations in the Company's facility . . . . .	\$ 7,892,810	\$ 7,212,400	\$ 6,189,638
Patent application expenses. . . . .	2,011,718	1,595,722	1,282,803
Costs incurred to Princeton University and USC under the 1997 Research Agreement (Note 3) . . . . .	679,910	933,156	859,339
PPG Development and License Agreement (Note 7) . . . . .	4,066,905	6,461,172	5,487,515
Amortization of intangibles. . . . .	1,695,072	1,695,072	1,695,072
Scientific Advisory Board Compensation. . . . .	304,920	—	289,900
	<u>\$16,651,335</u>	<u>\$17,897,522</u>	<u>\$15,804,267</u>

**Statement of Cash Flow Information**

The following non-cash investing and financing activities occurred:

	Year Ended December 31,		
	2004	2003	2002
Unrealized loss on available-for-sale securities . . . . .	\$ 41,000	\$ 20,251	\$ 14,661
Deemed dividends (Notes 8 and 10) . . . . .	129,624	1,034,302	1,953,479
Warrants issued for expenses on registered direct offering . . . . .	—	314,112	—
Reduction of conversion price of Convertible Notes (Note 9). . . . .	—	—	7,441,547

**Income Taxes**

The Company accounts for income taxes in accordance with SFAS No. 109, "Accounting for Income Taxes." Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities. Deferred tax assets or liabilities at the end of each period are determined using the tax rate expected to be in effect when taxes are actually paid or recovered.

**Stock Options**

The Company accounts for its stock option plans (Note 10) under Accounting Principles Board Opinion ("APB") No. 25, "Accounting for Stock Issued to Employees," under which no compensation cost is recognized for options issued to employees when the option price equals the fair market value of the Company's stock price on the date of grant. In 1995, the Financial Accounting Standards Board issued SFAS No. 123, "Accounting for Stock-Based Compensation." SFAS No. 123 established a fair value based method of accounting for stock-based compensation plans. SFAS No. 123 requires that a company's financial statements include certain disclosures about stock-based employee compensation arrangements regardless of the method used to account for the plan. The Company accounts for its stock option and warrant grants to non-employees in exchange for goods or services in accordance with SFAS No. 123 and Emerging Issues Task Force No. 96-18 ("EITF 96-18"). SFAS 123 and EITF 96-18 require that the Company account for its option and warrant grants to non-employees based on the fair value of the options and warrants granted.

As allowed by SFAS 123, the Company has elected to continue to account for its employee stock-based compensation plans under APB Opinion No. 25, and adopted only the disclosure requirements of SFAS No. 123 as amended by SFAS No. 148. Had the Company recognized compensation cost for its stock based compensation

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: — (Continued)**

plans consistent with the provisions of SFAS 123, the Company's net loss and net loss per share would have been increased to the following pro forma amounts:

	Year Ended December 31,		
	2004	2003	2002
Net loss applicable to Common shareholders:			
As reported . . . . .	\$(15,906,198)	\$(18,387,507)	\$(32,972,680)
Add stock-based employee compensation expense included in reported net income, net of tax . . . . .	2,077,349	1,018,086	—
Deduct total stock-based employee compensation expense determined under fair-value-based method for all rewards, net of tax . . . . .	(6,883,549)	(3,325,377)	(3,056,777)
Pro forma . . . . .	<u>(20,712,398)</u>	<u>(20,694,798)</u>	<u>(36,029,457)</u>
Basic and diluted net loss per share:			
As reported . . . . .	\$ (0.59)	\$ (0.82)	\$ (1.71)
Pro forma . . . . .	(0.77)	(0.92)	(1.87)

The fair value of the options granted is estimated using the Black-Scholes option-pricing model with the following assumptions:

	2004	2003	2002
Risk-free interest rate . . . . .	3.8-4.3%	2.6-3.8%	3.3-5.0%
Volatility . . . . .	86.3-94%	94%	94%
Expected dividend yield . . . . .	0%	0%	0%
Expected option life . . . . .	7 years	7 years	7 years

**Recent Accounting Pronouncements**

In November 2004, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standard ("SFAS") No. 151, Inventory Costs, which amends the guidance in Accounting Research Bulletin ("ARB") No. 43, Chapter 4, Inventory Pricing, to clarify the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material. SFAS No. 151 requires that those items be recognized as current-period charges regardless of whether they meet the criterion of "so abnormal." In addition, SFAS No. 151 requires allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The Company believes the adoption of SFAS No. 151 will not have an impact on its financial statements.

In December 2004, the FASB issued SFAS No. 153, Exchanges of Nonmonetary Assets. SFAS No. 153 is an amendment to APB Opinion No. 29, Accounting for Nonmonetary Transactions. SFAS No. 153 eliminates the exception for nonmonetary exchanges of similar productive assets and replaces it with a general exception for exchanges of nonmonetary assets that do not have commercial substance. The provision of SFAS No. 153 is effective for nonmonetary asset exchanges occurring in fiscal periods beginning after June 15, 2005. The Company believes the adoption of SFAS No. 153 will not have an impact on its financial statements.

In December 2004, the FASB issued SFAS No. 123R, Share-Based Compensation, which supersedes Accounting Principles Board ("APB") Opinion No. 25, Accounting for Stock Issued to Employees, and its related implementation guidance. SFAS No. 123R focuses primarily on accounting for transactions in which an entity obtains employee services through share-based payment transactions. SFAS No. 123R requires a public entity to measure the cost of employee services received in exchange for the award of equity investments based

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: — (Continued)**

on the fair value of the award at the date of grant. The cost will be recognized over the period during which an employee is required to provide services in exchange for the award. SFAS No. 123R is effective as of the beginning of the first interim or annual reporting period that begins after June 15, 2005. The impact on net earnings as a result of the adoption of SFAS No. 123R, from a historical perspective, is set forth above. The Company is currently evaluating the provisions of SFAS No. 123R and will adopt it in 2005, as required. The Company believes that the adoption of SFAS No. 123R will have a significant impact on its financial statements.

**Reclassifications**

Certain prior year amounts have been reclassified to conform to the current year presentation.

**3. RESEARCH AND LICENSE AGREEMENTS WITH PRINCETON UNIVERSITY:**

The Company previously sponsored OLED technology research conducted at Princeton University under a Sponsored Research Agreement between the Trustees of Princeton University and American Biomimetics Corporation ("ABC") dated August 1, 1994 (as amended, the "1994 Sponsored Research Agreement"). ABC, a privately held Pennsylvania corporation that is affiliated with the Company, assigned its rights and obligations under the 1994 Sponsored Research Agreement to the Company in October 1995.

The Company paid Princeton University \$4,481,641 under the 1994 Sponsored Research Agreement and the 1997 Research Agreement (Note 1) between them through the period ending on July 31, 2002. In April 2002, the Company amended the 1997 Research Agreement with Princeton University providing, among other things, for an additional five-year term. The Company is obligated to pay Princeton University up to \$7,477,993 under the 1997 Research Agreement from July 31, 2002 through July 31, 2007. Payments to Princeton University under this agreement are charged to research and development expenses when they become due.

Pursuant to a License Agreement between the Trustees of Princeton University and ABC dated August 1, 1994 (as amended, the "1994 License Agreement"), Princeton University granted the Company a worldwide exclusive license, with rights to sublicense, to make, have made, use, lease and/or sell products and to practice processes based on a pending patent application of Princeton University relating to OLED technology. Under the 1994 License Agreement, Princeton University further granted ABC similar license rights with respect to patent applications and issued patents arising out of work performed by Princeton University under the 1994 Sponsored Research Agreement. ABC assigned its rights and obligations under the 1994 License Agreement to the Company in June 1995. On October 9, 1997, the Company and Princeton University entered into an Amended License Agreement that amended and restated the 1994 License Agreement (as amended, the "1997 Amended License Agreement"). Under the 1997 Amended License Agreement, Princeton University granted the Company corresponding license rights with respect to patent applications and issued patents arising out of work performed by Princeton University and USC under the 1997 Research Agreement.

Under the 1997 Amended License Agreement with Princeton University and the University of Southern California ("USC"), the Company is required to pay Princeton University royalties for licensed products sold by the Company or its sublicensees. For licensed products sold by the Company, the Company is required to pay Princeton University 3% of the net sales price of these products. For licensed products sold by the Company's sublicensees, the Company is required to pay Princeton University 3% of the revenues received by the Company from these sublicensees. These royalty rates are subject to renegotiation for products not reasonably conceivable as arising out of the Research Agreement if Princeton University reasonably determines that the royalty rates payable with respect to these products are not fair and competitive.

The Company is obligated under the 1997 Amended License Agreement to pay to Princeton University minimum annual royalties. The minimum royalty payment was \$75,000 in 2001 and \$100,000 in 2002 and thereafter. These royalties are charged to research and development expense in the year they become due.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**3. RESEARCH AND LICENSE AGREEMENTS WITH PRINCETON UNIVERSITY: — (Continued)**

The Company also is required under the 1997 Amended License Agreement to use commercially reasonable efforts to bring the licensed OLED technology to market. However, this requirement is deemed satisfied provided the Company performs its obligations under the 1997 Research Agreement and, when that agreement ends, the Company invests a minimum of \$800,000 per year in research, development, commercialization or patenting efforts respecting the patent rights licensed to the Company.

**4. ACQUIRED TECHNOLOGY:**

On July 19, 2000, the Company, PD-LD, Inc. ("PD-LD"), its president Dr. Vladimir Ban and the Trustees of Princeton University entered into a Termination, Amendment and License Agreement whereby the Company acquired all PD-LD's rights to certain issued and pending OLED technology patents in exchange for 50,000 shares of the Company's common stock. Pursuant to this transaction, these patents were included in the patent rights exclusively licensed to the Company under the 1997 Amended License Agreement. The acquisition of these patents had a fair value of \$1,481,250 (Note 2).

On September 29, 2000, the Company entered into a License Agreement with Motorola, Inc. ("Motorola"). Pursuant to this agreement, the Company licensed from Motorola what are now 74 issued U.S. patents and corresponding foreign patents relating to OLED technologies. These patents expire between 2012 and 2018. The Company has the sole right to sublicense these patents to OLED display manufacturers. As consideration for this license, the Company issued to Motorola 200,000 shares of the Company's common stock (valued at \$4,412,500), 300,000 shares of the Company's Series B Convertible Preferred Stock (valued at \$6,618,750), and a warrant to purchase 150,000 shares of the Company's common stock at \$21.60 per share. This warrant became exercisable on September 29, 2001, and will remain exercisable until September 29, 2008. The warrant was recorded at a fair market value of \$2,206,234 based on the Black-Scholes option-pricing model, and was recorded as a component of the cost of the acquired technology. The Company also issued a warrant to an unaffiliated third party to acquire 150,000 shares of common stock as a finder's fee in connection with this transaction. This warrant was granted with an exercise price of \$21.60 per share and is exercisable immediately and will remain exercisable until September 29, 2007. This warrant was accounted for at its fair value based on the Black-Scholes option pricing model and \$2,206,234 was recorded as a component of the cost of the acquired technology. The Company used the following assumptions in the Black-Scholes option pricing model for the 300,000 warrants issued in connection with this transaction: (1) 6.3% risk-free interest rate, (2) expected life of 7 years, (3) 60% volatility, and (4) zero expected dividend yield. In addition, the Company incurred \$25,750 of direct cash transaction costs that have been included in the cost of the acquired technology. In total, the Company recorded an intangible asset of \$15,469,468 for the technology acquired from Motorola (Note 2).

The Company is required under the License Agreement to pay Motorola on gross revenues earned by the Company for its sales of OLED products or components, or from its sublicensees for their sales of OLED products or components, whether or not these products or components are based on inventions claimed in the patent rights licensed from Motorola (Note 12). Moreover, the Company is required to pay Motorola minimum royalties of \$150,000 for the two-year period ending on December 31, 2002, \$500,000 for the two-year period ending on December 31, 2004, and \$1,000,000 for the two-year period ending on December 31, 2006. All royalty payments may be made, at the Company's discretion, in either all cash or 50% cash and 50% in shares of the Company's common stock. The number of shares of common stock used to pay the stock portion of the royalty is equal to 50% of the royalty due divided by the average daily closing price per share of the Company's common stock over the 10 trading days ending two business days prior to the date the common stock is issued. Since the minimum royalty exceeded the actual royalties for the year ended December 31, 2004 and 2003, the Company accrued \$250,000 each year in royalty expense. For the two-year period ending on December 31, 2002, the Company issued to Motorola 8,000 shares of the Company's common stock, valued at \$71,816, and paid Motorola \$78,184 in cash to satisfy the minimum royalty obligation of \$150,000.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**5. ACCRUED EXPENSES:**

Accrued expenses consist of the following:

	December 31,	
	2004	2003
Accrued professional fees .....	\$ 505,828	\$ 160,203
Compensation .....	2,063,705	1,169,818
Research and development agreements .....	245,484	133,715
Accrued minimum royalties .....	600,000	350,000
Other .....	282,415	206,474
	<u>\$3,697,432</u>	<u>\$2,020,210</u>

**6. LONG-TERM DEBT:**

	December 31,	
	2004	2003
Note payable to bank in monthly installments of \$25,000, plus interest at LIBOR plus 1.25% (3.65% at December 31, 2004), due in December 2009, secured by restricted cash ..	\$4,500,000	\$—
	4,500,000	—
Less: current portion .....	300,000	—
Long-term debt .....	<u>\$4,200,000</u>	<u>\$—</u>

Future maturities of long-term debt as of December 31, 2004 are as follows:

2005 .....	\$ 300,000
2006 .....	300,000
2007 .....	300,000
2008 .....	300,000
2009 .....	3,300,000
Total .....	<u>\$4,500,000</u>

**7. COMMON STOCK AND WARRANTS ISSUED UNDER THE PPG DEVELOPMENT AND LICENSE AGREEMENT:**

On October 1, 2000, the Company entered into a five-year Development and License Agreement with PPG Industries, Inc. ("PPG") to leverage the Company's OLED technologies with PPG's expertise in the development and manufacturing of organic materials. A team of PPG scientists and engineers are assisting the Company in developing and commercializing its proprietary OLED materials. In consideration for PPG's services under the agreement, the Company is required to issue shares of its common stock and warrants to acquire its common stock to PPG on an annual basis over the period from January 1, 2001 through December 31, 2005. The amount of securities the Company is required to issue is subject to adjustment under certain circumstances, as defined in the agreement.

In accordance with the agreement, during the first quarter of each of 2004, 2003 and 2002, the Company issued to PPG 157,609, 305,715 and 344,379 shares of the Company's common stock as consideration for services required to be provided by PPG under the Development and License Agreement in 2004, 2003 and 2002, respectively. During 2004, 2003 and 2002, the Company recorded the issuance of these shares as a charge of \$1,626,003, \$3,176,565 and \$2,858,063 to research and development expense based on the fair value of the

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**7. COMMON STOCK AND WARRANTS ISSUED UNDER THE PPG DEVELOPMENT AND LICENSE AGREEMENT: — (Continued)**

common stock as it was earned. The Company issued an additional 27,276, 9,746 and 16,645 shares of its common stock to PPG on February 15, 2005, 2004 and 2003, based on a final accounting for actual costs incurred by PPG in 2004, 2003 and 2002, respectively. Accordingly, the Company accrued \$245,484, \$133,715 and \$131,329 of additional research and development expense as of December 31, 2004, 2003 and 2002, respectively, based on the fair value of these additional shares.

In further consideration of the services performed by PPG under the Development and License Agreement, the Company is required to issue warrants to PPG to acquire shares of the Company's common stock. The number of warrants earned and issued is based on the number of shares of common stock earned by, and issued to, PPG by the Company during each calendar year of the term of the agreement. Accordingly, the Company recorded charges to research and development expense of \$1,296,748, \$2,692,418 and \$2,263,737 during the years ended December 31, 2004, 2003 and 2002, respectively. These charges were recorded based on the estimated fair value of warrants that were earned by PPG during each of 2004, 2003 and 2002. As a result, PPG earned warrants to acquire 184,885, 315,461 and 361,024 shares of the Company's common stock at exercise prices of \$24.28, \$10.39 and \$10.14 respectively. The warrants vest immediately and each have a contractual term of seven years. The warrants were issued on February 15, 2005, 2004 and 2003, respectively. The Company determined the fair value of the warrants earned during each of 2004, 2003 and 2002 using the Black-Scholes option-pricing model with the following assumptions: (1) risk free interest rate of 3.4-4.2%, 3.0-3.8% and 3.3%-5.4%, (2) no expected dividend yield, (3) expected life of seven years, and (4) expected volatility of 86.3-94%, 94% and 94%, respectively.

Also, in accordance with the agreement, the Company is required to reimburse PPG for its raw materials and conversion costs for all development chemicals supplied to the Company. The Company recorded \$710,759 and \$222,875 in research and development expenses related to these costs during the years ended December 31, 2004 and 2003, respectively.

The Company is required to grant options to purchase the Company's common stock to PPG employees performing services for the Company under the Development and License Agreement.

On December 17, 2001, the Company granted to PPG employees performing services under the agreement options to purchase 26,333 shares of the Company's common stock at an exercise price of \$8.56 per share. During 2002, the Company recorded \$176,779 in research and development expense related to these options.

On September 23, 2002, the Company granted options to PPG employees performing services under the agreement options to purchase 30,000 shares of the Company's common stock at an exercise price of \$5.45. During 2003 and 2002 respectively, the Company recorded \$229,355 and \$57,607 in research and development expense related to these options.

On April 20, 2004 and December 23, 2003, the Company granted to PPG employees performing development services under the agreement options to purchase 4,000 and 21,000 shares, respectively, of the Company's common stock at exercise prices of \$13.28 and \$13.92, respectively. During 2004 and 2003, the Company recorded charges of \$187,911 and \$6,244, respectively, to research and development expense for the fair market value of these options, as determined in accordance with the Black-Scholes option-pricing model.

The Company determined the fair value of the options earned during 2004, 2003 and 2002, respectively, using the Black-Scholes option-pricing model with the following assumptions: (1) risk free interest rate of 4.3-4.4%, 3.7%-4.3% and 3.7%-3.8%, (2) no expected dividend yield, (3) expected life of 10 years, and (4) expected volatility of 94%, respectively. Subject to certain contingencies, all of these options vest one year from the date of grant and expire 10 years from the date of issuance.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**8. SERIES A NONCONVERTIBLE PREFERRED STOCK AND SERIES B CONVERTIBLE PREFERRED STOCK:**

**Series A Nonconvertible Preferred Stock**

In 1995, the Company issued 200,000 shares of Series A Nonconvertible Preferred Stock ("Series A") to American Biomimetics Corporation, pursuant to a certain Technology Transfer Agreement. The Series A shares have a liquidation value of \$7.50 per share. Series A shareholders, as a single class, have the right to elect two members of the Company's Board of Directors. Holders of the Series A shares are entitled to one vote per share on matters which shareholders are generally entitled to vote. The Series A shareholders are not entitled to any dividends. The Series A shares were valued at \$1.75 per share, which was based upon an independent appraisal.

**Series B Convertible Preferred Stock**

In 2000, the Company issued 300,000 shares of Series B Convertible Preferred Stock ("Series B") to Motorola (Note 4). On October 6, 2004, all 300,000 shares of the Series B were automatically converted into 418,916 shares of the Company's common stock.

The Series B shares rank senior to the common stock and any other capital stock of the Company ranking junior to the Series B shares as to dividends and upon liquidation, dissolution or winding up. There are no restrictions upon the Company to create any other class of stock ranking equivalent or senior to the Series B shares. The Series B shares have a liquidation value of \$21.48 per share, plus accrued and unpaid dividends. Holders of Series B shares are entitled to that number of votes equal to the largest number of whole shares of common stock into which the Series B shares could be converted on matters which shareholders are generally entitled to vote. The Series B shareholders are entitled to dividends that are declared or paid to holders of the common stock.

Each share of the Series B shares was convertible, at the option of the holder, into such number of fully paid and nonassessable shares of common stock as was determined by dividing the original purchase price by the conversion price applicable to such share determined on the date the certificate is surrendered for conversion. Of the 300,000 shares of the Series B, 75,000 shares become convertible on each of September 29, 2001, 2002, 2003 and 2004, with all outstanding shares of the Series B being convertible into shares of the Company's common stock on September 29, 2004. The conversion price for the Series B shares was initially the original issuance price per share of the common stock, but was subject to change if the average price of the common stock fell below \$12.00 for the 30 trading days ending two business days prior to the relevant vesting date, regardless of prior changes to the conversion price. The Company had the option to pay Series B shareholders an amount of cash equal to the difference between \$12.00 and the average price of the common stock, multiplied by the number of shares of common stock into which the Series B shares would be convertible. Two business days prior to the September 29, 2004, 2003 and 2002 conversion dates, the Company's average stock price for the preceding 30 trading days was \$8.86, \$9.27 and \$5.50, respectively. As such, the original conversion price was adjusted in accordance with the conversion terms of the Series B, the conversion prices were reduced to \$15.86, \$16.59 and \$9.85, respectively, resulting in an additional 26,576, 22,107 and 88,553 shares of common stock being issuable to Motorola upon conversion. The incremental shares issuable upon conversion were accounted for as a contingent beneficial conversion feature ("CBCF") in accordance with EITF No. 00-27. The CBCF was measured by multiplying the incremental shares by the fair value of the Company's common stock on the commitment date of September 29, 2000, which was \$22.06. Accordingly, the Company recorded a CBCF in an amount of \$487,680 and \$1,953,479 in 2003 and 2002, respectively. The CBCF was treated as a deemed dividend to the Series B shareholders. In 2004, the Company made a cash payment of \$83,448 in lieu of reducing the conversion price of the Series B. The cash payment was treated and recorded as a deemed dividend.



**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**9. CONVERTIBLE PROMISSORY NOTES, CONVERTIBLE PREFERRED STOCK AND WARRANTS TO PURCHASE COMMON STOCK:**

On August 22, 2001, the Company closed on a private placement financing transaction with two investors whereby the Company sold two Convertible Promissory Notes ("Notes"), Series C Convertible Preferred Stock ("Series C"), and warrants to purchase the Company's common stock for a total of \$20,000,000. The Company accounted for this financing transaction as a package sale and allocated the cash proceeds received to the Notes, the Series C shares and the warrants to acquire common stock based on the relative fair value of each instrument. In December 2001, the holders converted all of the Series C shares into 535,704 shares of the Company's common stock.

The Company issued two \$7,500,000 Notes, each with a maturity date of August 22, 2004. The Notes were convertible into shares of the Company's common stock at an initial conversion price of \$13.97 per share, with such conversion price subject to change based on anti-dilution provisions and other adjustments.

In accordance with APB No. 14, "Accounting for Convertible Debt and Debt Issued with Stock Purchase Warrants" ("APB No. 14"), the Company allocated the proceeds from the private placement financing transaction to the Series C shares, the Notes and the warrants based on their relative fair values as of the commitment date. The fair value of the Notes was determined based on a three-year discounted cash flow analysis using a risk-adjusted interest rate of 11%. The Company determined the relative fair value of the Notes to be \$9,857,006. The resulting original issuance discount ("OID") of \$5,142,994 was amortized as interest expense, using the effective interest method, over the maturity period of three years. During the year ended December 31, 2002, the Company recognized non-cash charges to interest expense of \$1,819,989 for amortization of the OID.

In accordance with Emerging Issues Task Force ("EITF") No. 00-27, "Application of Issue No. 98-5 to Certain Convertible Instruments" ("EITF No. 00-27") and EITF No. 98-5, "Accounting for Convertible Securities with Beneficial Conversion Features or Contingently Adjustable Conversion Ratios" ("EITF No. 98-5"), and after considering the allocation of the proceeds to the Notes, the Company determined that the Notes contained a beneficial conversion feature ("BCF"). The BCF existed at the commitment date due to the fact that the carrying value of the Notes, after the initial allocation of the proceeds, was less than the fair market value of the common stock that was issuable upon conversion. Accordingly, the Company recorded a \$3,258,468 BCF as a debt discount on the commitment date. The BCF debt discount was being amortized as interest expense, using the effective interest method, over the maturity period of three years. During the year ended December 31, 2002, the Company recognized non-cash charges to interest expense of \$1,212,697, for amortization of the BCF.

In August 2002, the Company completed a registered direct offering of common stock to institutional investors that was deemed dilutive under the terms of the Notes. As a result, the conversion price of the Notes was reduced to \$5.09 per share. In accordance with EITF No. 98-5, this reduction in the conversion price resulted in a CBCF of \$7,441,547 that was recorded as additional debt discount to be amortized over the remaining term of the Notes.

In September 2002, \$7,000,002 in principal amount of the Notes was converted into 1,375,246 shares of common stock and the remaining \$7,999,998 in principal amount of the Notes was repaid, together with a prepayment premium, established under the Notes, of \$400,000 in cash. As of the date of conversion and repayment of the Notes in September 2002, the \$15,000,000 face value of the Notes exceeded their then-carrying value as a result of the unamortized OID, BCF and CBCF by \$9,611,781 and the intrinsic value of the Notes repurchased by \$1,508,841. As a result, the Company recognized a non-cash debt conversion and extinguishment expense of \$10,011,780 upon conversion and repayment of the Notes.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**10. SHAREHOLDERS' EQUITY, STOCK OPTIONS AND WARRANTS:**

**Shareholders' Equity**

In August and September 2002, the Company completed registered direct offerings (the "Offerings") of 1,277,014 and 383,452 shares, respectively, of common stock at \$5.09 and \$5.41 per share, respectively. The completion of the Offerings resulted in aggregate proceeds to the Company of \$8,055,186, net of \$519,288 in costs associated with the completion of the Offerings.

In August 2003, the Company sold 2,012,500 shares of the Company's common stock in a registered direct offering, resulting in gross proceeds of \$16,100,000. Costs of raising the capital were \$1,270,643. The common stock was issued at \$8.00 per share. In addition, the Company issued a warrant to purchase 50,313 shares of the Company's common stock, with a fair value of \$314,112, to the placement agent. The offering was deemed dilutive under the terms of certain warrants the Company had previously issued and resulted in the reduction of the exercise price of those warrants and increases in the number of shares issuable under certain of those warrants. The Company accounted for the change as a deemed dividend of \$546,622.

In March 2004, the Company sold 2,500,000 shares of its common stock at \$12.00 per share in a registered underwritten public offering. The offering resulted in proceeds to the Company of \$28,036,218, net of \$1,963,782 in associated costs. In April 2004, the Company sold an additional 50,000 shares of its common stock at \$12.00 per share to cover over-allotments in connection with this public offering. The sale of these additional shares resulted in proceeds of \$486,031, net of \$113,968 in associated costs.

In February 2004, the Company issued to PPG a warrant to purchase 315,461 shares of the Company's common stock and in March 2004, it sold 2,500,000 shares of its common stock in a public offering. These transactions were deemed dilutive under the terms of a warrant the Company had previously issued and resulted in the reduction of the exercise price of that warrant and an increase in the number of shares issuable under that warrant. The Company treated this occurrence as a deemed dividend of \$46,176.

In September 2004, in accordance with the terms of the Series B, the Company made a cash payment to Motorola in the amount of \$83,448 to take into account a conversion adjustment for 75,000 shares of the Series B that became convertible into the Company's common stock. The Company made the payment in lieu of reducing the conversion price of the Series B. The cash payment was treated and recorded as a deemed dividend.

**Equity Compensation Plan**

In 1995, the Board of Directors of the Company adopted the 1995 Stock Option Plan (the "1995 Plan"), under which options to purchase a maximum of 500,000 shares of the Company's common stock were authorized to be granted at prices not less than the fair market value of the common stock on the date of the grant, as determined by the Compensation Committee of the Board of Directors. Through 2004, the Company's shareholders have approved increases in the number of shares reserved for issuance under the 1995 Plan to 5,400,000, and have extended the term of the plan through 2015. The 1995 Plan was also amended and restated in 2003 and is now called the Equity Compensation Plan. The 1995 Plan provides for the granting of both incentive and nonqualified stock options, stock, stock appreciation rights and performance units to employees, directors and consultants of the Company. Stock options are exercisable over periods determined by the Compensation Committee, but for no longer than ten years from the grant date.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**10. SHAREHOLDERS' EQUITY, STOCK OPTIONS AND WARRANTS: — (Continued)**

**Option Activity**

The following table summarizes the stock option activity for 2004, 2003 and 2002 for all grants under the Equity Compensation Plan:

<u>Year</u>	<u>Granted</u>	<u>Exercise Price</u>	<u>Year of Expiration</u>	<u>Exercised</u>	<u>Forfeited</u>	<u>Exercisable</u>	<u>Outstanding</u>
2004.....	302,500	\$9.04-17.43	2014	—	—	270,500	302,500
2003.....	337,625	6.65-13.92	2013	750	—	224,375	336,875
2002.....	606,750	5.45-11.17	2012	86,665	—	490,171	520,085

The following tables summarize the stock options grant activity for each year for 2004, 2003 and 2002 for grants under the Equity Compensation Plan:

2004 grants and activity through December 31, 2004:

<u>Grantee</u>	<u>Granted</u>	<u>Exercise Price</u>	<u>Year of Expiration</u>	<u>Exercised</u>	<u>Exercisable</u>	<u>Outstanding</u>
Employees and Officers.....	198,500	\$9.04-17.43	2014	—	166,500	198,500
Board of Directors .....	100,000	16.94	2014	—	100,000	100,000
PPG Employees .....	4,000	13.28	2014	—	4,000	4,000(A)
Totals .....	<u>302,500</u>			<u>—</u>	<u>270,500</u>	<u>302,500</u>

(A) See Note 7.

2003 grants and activity through December 31, 2004:

<u>Grantee</u>	<u>Granted</u>	<u>Exercise Price</u>	<u>Year of Expiration</u>	<u>Exercised</u>	<u>Exercisable</u>	<u>Outstanding</u>
Employees and Officers.....	315,625	\$6.65-13.92	2013	750	202,375	314,875
Consultants .....	1,000	7.00-13.92	2013	—	1,000	1,000(A)
PPG Employees .....	21,000	13.92	2013	—	21,000	21,000(B)
Totals .....	<u>337,625</u>			<u>750</u>	<u>224,375</u>	<u>336,875</u>

(A) The Company recorded charges of \$5,789 to research and development expense and \$6,192 to general and administrative expense in 2003 for options granted to consultants. These charges represent the fair value of the options as determined in accordance with SFAS No. 123. The Company determined the fair value using the Black-Scholes option-pricing model with the following assumptions: (1) risk free interest rate of 3.1%-4.3%, (2) no expected dividend yield, (3) expected life of 10 years, and (4) expected volatility of 94%.

(B) See Note 7.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**10. SHAREHOLDERS' EQUITY, STOCK OPTIONS AND WARRANTS: — (Continued)**

2002 grants and activity through December 31, 2004:

Grantee	Granted	Exercise Price	Year of Expiration	Exercised	Exercisable	Outstanding
Employees and Officers . . . . .	405,000	\$5.45-11.17	2012	79,250	295,836	325,750
Board of Directors . . . . .	80,000	5.45	2012	—	80,000	80,000
Scientific Advisory Board . . . . .	60,000	5.45	2012	—	60,000	60,000(A)
Consultants . . . . .	31,750	5.45-9.94	2012	500	31,250	31,250(B)
PPG . . . . .	30,000	5.45	2012	6,915	23,085	23,085(C)
Totals . . . . .	<u>606,750</u>			<u>86,665</u>	<u>490,171</u>	<u>520,085</u>

(A) The Company recorded a charge of \$289,900 to research and development expense in 2002 for options granted to members of the Company's Scientific Advisory Board. The charge represents the fair value of these options as determined in accordance with SFAS No. 123. The Company determined the fair value using the Black-Scholes option-pricing model with the following assumptions: (1) risk free interest rate of 3.7%, (2) no expected dividend yield, (3) expected life of 10 years, and (4) expected volatility of 94%.

(B) The Company recorded charges of \$224,954 to research and development expense and \$2,416 to general and administrative expense in 2002 for options granted to consultants. These charges represent the fair value of the options as determined in accordance with SFAS No. 123. The Company determined the fair value using the Black-Scholes option-pricing model with the following assumptions: (1) risk free interest rate of 3.7%-4.9%, (2) no expected dividend yield, (3) expected life of 7-10 years, and (4) expected volatility of 94%.

(C) See Note 7.

The following table summarizes all stock option activity for 2004, 2003 and 2002:

	2004		2003		2002	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Outstanding at beginning of year . . . . .	3,134,444	\$ 8.05	3,014,019	\$ 7.25	2,422,769	\$7.58
Granted . . . . .	302,500	16.58	337,625	12.49	606,750	5.87
Exercised . . . . .	(167,901)	5.01	(214,200)	3.73	(15,500)	4.67
Forfeited . . . . .	—	—	(3,000)	12.00	—	—
Outstanding at end of year . . . . .	<u>3,269,043</u>	<u>8.99</u>	<u>3,134,444</u>	<u>8.05</u>	<u>3,014,019</u>	<u>7.25</u>
Exercisable at end of year . . . . .	<u>3,072,629</u>	<u>8.77</u>	<u>2,873,944</u>	<u>6.22</u>	<u>2,814,499</u>	<u>6.88</u>
Available for future grant . . . . .	<u>1,446,851</u>		<u>1,052,101</u>		<u>605,937</u>	
Weighted average fair value of options granted . . . . .		<u>\$13.46</u>		<u>\$10.37</u>		<u>\$4.69</u>

The weighted average remaining contractual life for options outstanding as of December 31, 2004, 2003 and 2002 was six, seven and seven years, respectively.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**10. SHAREHOLDERS' EQUITY, STOCK OPTIONS AND WARRANTS: — (Continued)**

**Common Stock Warrants**

The following table summarizes all of the warrant activity for 2004, 2003 and 2002 for all grants in each year:

<u>Year</u>	<u>Granted</u>	<u>Exercise Price</u>	<u>Year of Expiration</u>	<u>Exercised</u>	<u>Forfeited</u>	<u>Exercisable</u>	<u>Outstanding</u>
2004.....	315,461	\$10.39	2011	—	—	315,461	315,461
2003.....	411,337	8.00-10.14	2008-2010	—	—	411,337	411,337
2002.....	121,843	24.28	2009	—	—	121,843	121,843

**Warrant Activity**

The following table summarizes the stock warrant activity for 2004, 2003 and 2002:

2004 grants and activity through December 31, 2004:

<u>Grantee</u>	<u>Granted</u>	<u>Exercise Price</u>	<u>Year of Expiration</u>	<u>Exercised</u>	<u>Forfeited</u>	<u>Exercisable</u>	<u>Outstanding</u>
PPG.....	<u>315,461</u>	\$10.39	2011	<u>—</u>	<u>—</u>	<u>315,461</u>	<u>315,461(A)</u>

(A) See Note 7.

2003 grants and activity through December 31, 2004:

<u>Grantee</u>	<u>Granted</u>	<u>Exercise Price</u>	<u>Year of Expiration</u>	<u>Exercised</u>	<u>Forfeited</u>	<u>Exercisable</u>	<u>Outstanding</u>
PPG.....	361,024	\$10.14	2010	—	—	361,024	361,024(A)
Private Placement Agent fees .	<u>50,313</u>	8.00	2008	<u>—</u>	<u>—</u>	<u>50,313</u>	<u>50,313</u>
Totals.....	<u>411,337</u>			<u>—</u>	<u>—</u>	<u>411,337</u>	<u>411,337</u>

(A) See Note 7.

2002 grants and activity through December 31, 2004:

<u>Grantee</u>	<u>Granted</u>	<u>Exercise Price</u>	<u>Year of Expiration</u>	<u>Exercised</u>	<u>Forfeited</u>	<u>Exercisable</u>	<u>Outstanding</u>
PPG.....	<u>121,843</u>	\$24.28	2009	<u>—</u>	<u>—</u>	<u>121,843</u>	<u>121,843(A)</u>

(A) See Note 7.

**11. RESEARCH CONTRACTS:**

Contract research revenue consists of the following:

	<u>December 31,</u>		
	<u>2004</u>	<u>2003</u>	<u>2002</u>
U.S. Army.....	\$ 776,284	\$ 610,885	\$ 468,618
Army Research Laboratory (ARL) .....	759,767	594,789	129,320
Department of Energy (DoE) .....	725,793	215,310	43,552
Air Force Research Laboratory (AFRL) .....	343,793	—	—
Department of Defense Advanced Research Projects.....	15,999	—	827,468
Agency (DARPA) .....	<u>\$2,621,636</u>	<u>\$1,420,984</u>	<u>\$1,468,958</u>

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**12. COMMITMENTS:**

**Lease Commitments**

The Company has several operating lease arrangements for office space and equipment. Total rent expense was \$371,259, \$356,071 and \$411,300, for the years ended December 31, 2004, 2003 and 2002, respectively. Minimum future rental payments for operating leases as of December 31, 2004 are as follows:

2005 .....	\$29,841
2006 .....	1,445
2007 .....	—
2008 .....	—
2009 and thereafter .....	—
	<u>\$31,286</u>

**Other Commitments**

Under the terms of the Company's License Agreement with Motorola (Note 4), the Company agreed to make minimum royalty payments to Motorola. To the extent that the royalties otherwise payable to Motorola under this agreement are not sufficient to meet the minimums, the Company is required to pay the shortfall, at its discretion, in all cash or in 50% cash and 50% common stock within 90 days after the end of each two-year period specified below in which the shortfall occurs. For the two-year period ending December 31, 2002, the Company issued to Motorola 8,000 shares of the Company's common stock, valued at \$71,816, and paid \$78,184 in cash as a result of the minimum royalty due of \$150,000. For the two-year period ending December 31, 2004, the Company is required to pay \$500,000 to Motorola by March 31, 2005. A future minimum royalty payment of \$1,000,000 is required for the two-year period ending December 31, 2006.

In accordance with the amendment to the 1997 Research Agreement with Princeton University, the Company is required to pay annually to Princeton University up to \$1,495,599 from July 31, 2002 through July 31, 2007.

Under the terms of the 1997 Amended License Agreement with Princeton University (Note 3), the Company is required to pay Princeton University minimum royalty payments. To the extent that the royalties otherwise payable to Princeton University under this agreement are not sufficient to meet the minimums for the relevant calendar year, the Company is required to pay Princeton University the difference between the royalties paid and the minimum royalty. The minimum royalty was \$25,000 in 1999, \$50,000 in 2000, \$75,000 in 2001, and is \$100,000 in 2002 and each year thereafter.

**13. INCOME TAXES:**

The components of income taxes are as follows:

	December 31,		
	2004	2003	2002
Current .....	\$ (612,966)	\$ —	\$ (225,657)
Deferred .....	(6,082,570)	(7,494,070)	(10,135,959)
	(6,082,570)	(7,494,070)	(10,135,959)
Increase in valuation allowance .....	6,082,570	7,494,070	10,135,959
	<u>\$ (612,966)</u>	<u>\$ —</u>	<u>\$ (225,657)</u>

The difference between the Company's federal statutory income tax rate and its effective income tax rate is due to state income tax benefits, non-deductible expenses, general business credits and the increase in valuation allowance.

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**13. INCOME TAXES: — (Continued)**

As of December 31, 2004, the Company had federal net operating loss carryforwards of approximately \$54,442,000 which will begin to expire in 2011, and state net operating loss carryforwards of approximately \$40,163,000, which will begin to expire in 2008. The net operating loss carryforwards differ from the accumulated deficit principally due to the timing of the recognition of certain expenses. The Company also has other federal general business credit carryforwards for tax purposes of approximately \$1,021,000, which expire during the years 2018 through 2023, and state general business credit carryforwards of \$681,000, which expire during the years 2013 and 2018. In accordance with the Tax Reform Act of 1986, the utilization of the net operating loss and general business credit carryforwards could be subject to certain limitations as a result of certain ownership changes.

Significant components of the Company's deferred tax assets and liabilities are as follows:

	December 31,	
	2004	2003
Gross deferred tax assets:		
Net operating loss carryforwards .....	\$ 21,128,235	\$ 14,187,288
Capitalized start-up costs .....	7,788,521	9,735,652
Capitalized technology license .....	2,394,808	2,414,778
Stock options and warrants .....	3,545,785	3,331,769
Accruals and reserves .....	210,094	325,867
Deferred revenue .....	2,309,864	1,930,648
Other .....	649,726	407,883
General business credit carryforward .....	1,703,178	1,313,756
	39,730,211	33,647,641
Valuation allowance .....	(39,730,211)	(33,647,641)
Net deferred tax asset .....	<u>\$ —</u>	<u>\$ —</u>

During 2004 and 2002, the Company sold approximately \$8 million and \$3 million, respectively, of its net state operating losses (NOLs) to New Jersey under the Technology Tax Certificate Transfer Program. For the years ended December 31, 2004 and 2002, the Company received \$612,966 and \$225,657, respectively, for the sale of the NOLs and recorded the proceeds as an income tax benefit.

A valuation allowance was established for all of the net deferred tax assets because the Company has incurred substantial operating losses since inception and expects to incur additional losses in 2005. The Company's management has concluded that these deferred tax assets will more likely than not be recognized.

**14. DEFINED CONTRIBUTION PLAN:**

During 2000, the Company adopted the Universal Display Corporation 401(k) Plan (the "Plan") in accordance with the provisions of Section 401(k) of the Internal Revenue Code (the "Code"). The Plan covers substantially all full-time employees of the Company. Participants may contribute up to 15% of their total compensation to the Plan, not to exceed the limit as defined in the Code, with the Company matching 50% of the participant's contribution, limited to 6% of the participant's total compensation. For the years ending December 31, 2004, 2003 and 2002, the Company contributed \$133,780, \$112,023 and \$91,043 to the Plan, respectively.

**15. QUARTERLY SUPPLEMENTAL FINANCIAL DATA (UNAUDITED):**

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters in the two-year period ended December 31, 2004. In the opinion of management, this quarterly

**UNIVERSAL DISPLAY CORPORATION AND SUBSIDIARY**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**15. QUARTERLY SUPPLEMENTAL FINANCIAL DATA (UNAUDITED): — (Continued)**

information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting of only normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of the results for the full year or for any future period.

Year ended December 31, 2004:

	Three Months Ended			
	March 31	June 30	September 30	December 31
Revenue . . . . .	\$ 2,129,990	\$ 1,472,023	\$ 1,711,629	\$ 1,693,271
Net loss . . . . .	(4,061,424)	(4,520,272)	(3,669,214)	(3,525,664)
Deemed dividends . . . . .	(46,176)	—	(83,448)	—
Net loss attributable to Common shareholders . . . .	(4,107,600)	(4,520,272)	(3,752,662)	(3,525,664)
Basic and diluted loss per share . . . . .	(0.17)	(0.17)	(0.14)	(0.11)

Year ended December 31, 2003:

	Three Months Ended			
	March 31	June 30	September 30	December 31
Revenue . . . . .	\$ 1,180,947	\$ 1,349,956	\$ 2,140,335	\$ 1,921,955
Net loss . . . . .	(3,868,746)	(4,092,994)	(3,657,885)	(5,733,580)
Deemed dividends . . . . .	—	—	(1,034,302)	—
Net loss attributable to Common shareholders . . . .	(3,868,746)	(4,092,994)	(4,692,187)	(5,733,580)
Basic and diluted loss per share . . . . .	(0.18)	(0.19)	(0.21)	(0.24)



# Corporate Directory

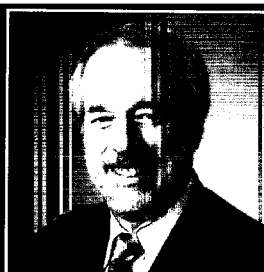
## BOARD OF DIRECTORS



**Sherwin I. Seligsohn**  
Chairman of the Board and  
Chief Executive Officer



**Steven V. Abramson**  
President and  
Chief Operating Officer



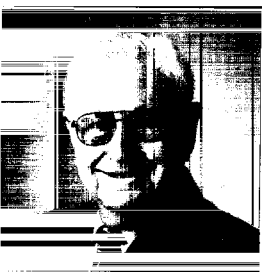
**Sidney D. Rosenblatt**  
Executive Vice President and  
Chief Financial Officer

## CORPORATE OFFICES

**Princeton Crossroads  
Corporate Center**  
375 Phillips Boulevard  
Ewing, NJ 08618  
609-671-0980  
609-671-0995 (fax)  
www.universaldisplay.com

## SHAREHOLDER CONTACT

**Dean L. Ledger**  
Investor Relations  
Executive Vice President  
609-699-4426



**Leonard Becker**  
Managing Partner,  
Becker Associates



**Elizabeth H. Gemmill, Esq.**  
Managing Trustee,  
Warwick Foundation



**C. Keith Hartley**  
Managing Partner,  
Hartley Capital Advisors



**Larry Lacerte**  
Founder, President and  
Chief Executive Officer,  
Lacerte Technologies Inc.

**OFFICIAL  
REPRESENTATIVE  
IN JAPAN**  
**Ichiro Nakagawa**  
7-10-6-704  
Akasaka, Minatoku  
Tokyo, 107-0052 JAPAN  
Phone: 81-3-3585-3175  
Email: IchiNKGW@aol.com

## CORPORATE COUNSEL

**Morgan, Lewis & Bockius LLP**  
1701 Market Street  
Philadelphia, PA 19103

**INDEPENDENT  
PUBLIC ACCOUNTANT**  
**KPMG LLP**  
1601 Market Street  
Philadelphia, PA 19103

## SCIENTIFIC ADVISORY BOARD



**Dr. Julie J. Brown**  
Vice President and  
Chief Technical Officer,  
Universal Display Corporation



**Dr. Stephen R. Forrest**  
James S. McDonnell  
Distinguished University Professor,  
Electrical Engineering,  
Pittsburgh University



**Dr. Mark E. Thompson**  
Professor,  
Department of Chemistry,  
University of Southern California

**INTELLECTUAL  
PROPERTY COUNSEL**  
**Kenyon & Kenyon**  
One Broadway  
New York, NY 10004



**Dr. Michael Hack**  
Vice President of Strategic  
Product Development,  
Universal Display Corporation



**Dr. David B. Knowles**  
Senior Research Associate,  
Research and Development,  
PPG Industries, Inc.



**Dr. Peter B. Mackenzie**  
Scientist,  
Research and Development,  
PPG Industries, Inc.

**TRANSFER AGENT  
AND REGISTRAR**  
**American Stock Transfer  
& Trust Company**  
40 Wall Street  
New York, NY 10005

**UNIVERSAL DISPLAY**  
**CORPORATION**

Princeton Crossroads Corporate Center

74 Phillips Boulevard, Ewing, New Jersey 08618

Phone 609.671.0980

Fax 609.671.0995

[www.universaldisplay.com](http://www.universaldisplay.com)

ASD/AO: PANL